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THE RELATION OF HISTAMINASE TO INTESTINAL TOXEMIA AND ASTHMA*

PRELIMINARY REPORT

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NEW ORLEANS

For more than three decades I have tried to interest the medical profession as to the importance of a consideration of intestinal toxemia in all medical cases,[1] but more especially, in the treatment of asthma and urticaria[2]; assuming that histamine was the specific cause of these clinical manifestations, but being unable to prove it. However, in 1912[3] I was able to produce experimental asthma in the guinea pig by the intravenous injection of histamine. Certainly, attention to the prevailing intestinal putrefaction, and restriction of diet to one with a low histidin content, has been of inestimable value in controlling the asthmatic attacks while the specific allergen is being determined, and during desensitization.

Ackermann,[4] many years ago noted that histidin yielded, on putrefaction, beta-imidazolylethylamine—hence the very name histamine—yet few of us take cognizance of the presence of this amine in the intestinal canal. As early as 1915[5] I was able to demonstrate that the liver of the ordinary turkey buzzard contained an enzyme which rendered histamine inert. More recently, Best and McHenry[6] have been able to isolate an enzyme from the intestinal mucosa, the liver, kidneys and lungs of dogs which acts similarly, and for which they have suggested the name "histaminase." I have been fortunate in obtaining an ample supply of this material * for clinical observation, the results of which are so amazing that I feel justified in submitting this preliminary report in corroboration of the recent report of Forshay and Hagebusch[7] on the result of the treatment of serum sickness with histaminase, which may appear extraordinary to one not acquainted with the biochemistry of this condition.

Due to the work of Dale[8] and his co-workers, also Dragstedt[9] and his co-workers, and more recently Code,[10] it is generally accepted that the several allergic manifestations observed are due to the local liberation of histamine in the tissues. If such is the case it is reasonable then, in the treatment of allergy, to limit the source of histamine to this local point, eliminating all other sources of histamine, notably from the intestinal canal. The results obtained in other conditions than asthma by the administration of this so-called "histaminase" lead me to suppose that this enzyme acts not only on histamine but also on the other toxic amines in the intestinal canal.

On putrefaction, the several amino acids split off CO_2 and form a corresponding amine with definite physiologic action.

* Read before the Orleans Parish Medical Society, June 12, 1939.

* The histaminase was supplied by the Department of Medical Research, Winthrop Chemical Company, Inc., New York.

CHART 1

TABLE SHOWING AMINES CORRESPONDING TO AMINO ACIDS AND THEIR PHYSIOLOGIC ACTION

Amino Acid RNH_2COOH	Corresponding Amine $R.NH_2$	Synonym	Physiologic Action	Authority
Leucine	Iso-amyl amine		Raises blood pressure	Dale and Dixon[11]
Tyrosine	Para-hydroxy-phenyl-ethyl-amine	Tyramine	Raises blood pressure	Dale and Dixon[11]
Histidine	Beta-imidazolyl-ethylamine	Histamine	Lowers blood pressure Contracts uterus and bronchioles	Dale and Laidlaw[12] Ackermann[4]
Lysine	Pentamethylene-diamine	Cadaverine	Lowers blood pressure, nausea, vomiting	Vaughan and Novy[13]
Arginine	Guanidine-tetra-methylene amine	Agmatine	Not constant	Kossel[14]
Tryptophane	Indol and skatol		Headache, vertigo, nausea, vomiting	Herter and Wakeman[15]
Tryptophane	Indol ethylamine		Clonic and tonic convulsions	Laidlaw[16]

Over forty years ago my former chief, Russell Chittenden, taught that peptones on absorption and passage through the intestinal mucosa disappear as such. It is generally accepted that nature has a definite defense against intestinal poisons; although Herter[15] showed that indol, which is definitely toxic, is oxidized in the liver to indoxyl and combined with potassium and sulphuric acid to form potassium indoxyl sulfate, or indican, an inert substance. The exact mechanism is not understood. Ewins and Laidlaw,[17] by perfusing tyramine, the amine from the putrefaction of tyrosine, through the liver of a dog, showed that it is broken up into urea and oxyphenyl acetic acid, and later[18] under the same conditions showed that indol ethylamine forms indol acetic acid. Only by acting on the several amines in the intestinal canal and rendering them inert, can one explain the beneficial results of this so-called histaminase when administered in enteric coated capsules; the enzyme probably rendering the histamine in the alimentary canal inert, thus allowing the histaminase in the tissues to cope with the parenteral histamine.

I am reporting only four cases of patients with asthma who were treated with histaminase, The surprising results of which warrant this preliminary report; a final report is to be made later after further clinical observations.

CASE NO. 1

H. F. D., is a white male, 29 years of age, whose asthma could be controlled by low histidin diet, but whenever he ate crabs or shrimp, an attack of asthma would follow. After taking 24 units* of histaminase in enteric coated capsules he ate large quantities of both crabs and shrimp without any symptoms of asthma. On 24 units of histaminase daily, with total disregard of diet, he remained free from asthma for four days and the dose was reduced to 12 units daily. He had slight wheezing and the dose was increased to 24 units daily with no symptoms of asthma for two weeks. Histaminase was stopped and in three days he had a mild asthmatic attack, but no further attacks after resuming histaminase. By curtailing somewhat his histidin intake he has been free from asthma for the past month, with only 4 units of histaminase daily.

CASE NO. 2

D. B., a colored male, 50 years old, has had asthma for the past five years, and on account of inability to control diet, he rarely had a full night's sleep because of asthma. After taking 64 units of histaminase in enteric coated capsules, he obtained complete relief and has had no seizure for the past month with 15 units of histaminase daily.

CASE NO. 3

A. W. Jr., a white male, 8 years old, has had constant asthmatic attacks with severe paroxysmal coughing since last June from a complicating bronchitis and mediastinal adenitis.

According to his parents he had not had a full night's sleep since June and had lost considerable weight. On a low histidin diet and 48 units daily of histaminase in enteric coated capsules, he obtained partial relief after taking 96 units of histaminase, and complete relief after taking 300 units. At present he is free from symptoms with

*A unit of histaminase is the amount necessary to inactivate 1 mg. of histamine.

negative auscultatory findings on 5 units of histaminase three times a day. Diathermy through the mediastinum may have had some influence in overcoming the associated adenopathy.

CASE NO. 4

Mrs. W. E. M., a white female, 54 years old, has been under my observation for the past eight years. She has a chronic ethmoiditis with recurrent nasal polypi and has been a very intractable case of asthma, associated with myocardial weakness and bronchiectasis. Her asthmatic attacks were so severe that it was necessary to take from three to four hypodermatic injections of adrenalin daily to obtain relief. Low histidin diet gave only partial relief. On 48 units daily of histaminase in enteric coated capsules, she has had only very mild attacks of asthma, promptly relieved by adrenalin spray (1-100), and she has not had to take any adrenalin by needle.

COMMENT

If a definite amount of histaminase is necessary to inactivate a certain amount of histamine, then to overcome the effects of histamine in the intestinal canal, it is logical to give relatively large doses of histaminase at the beginning of treatment. By limiting the amount of ingested histidin, a relatively small dose of histaminase is required, and in many instances if the diet is controlled, none is necessary. However, for the general practitioner who is unacquainted with the chemistry of the several foodstuffs, histaminase may possibly control asthmatic attacks until the specific allergen is identified and desensitization can be carried out.

The histidin content of the more common proteins is contained in the following chart:

PROTEIN	SOURCE	PER CENT HISTIDIN
Sturin	Fish	12.90
Hemoglobin	Blood	10.93
Syntonin	Meat	2.66
Albumin	Eggs	2.50
Caseinogen	Milk	2.60
Legumin	Green peas	2.50
Phaseolin	Beans	2.60
Edestin	Hemp	2.19
Vignin	Cow peas	3.08
Gliadin	Wheat	1.70
Peptone	All protein	1.12
Amandin	Almonds	1.53
Zein	Maize	0.81
Protamine	Rye	0.39
Gelatin	Tendons	0.40

SUMMARY

No untoward by-effects have been noted and from a physiologic standpoint none should be expected from oral administration of histaminase. In a few instances the capsules were passed by rectum, unabsorbed, but this has been overcome by giving them at least one-half hour before meals. The product deteriorates rapidly and should be kept in a refrigerator.

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PHYSIOTHERAPY IN SIMPLE FRACTURES INTERSECTING JOINTS*

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Physiotherapy has an important place in the treatment of fractures. It accomplishes most, perhaps, in those fractures which intersect joints. Unfortunately, however, treatments have been poorly timed and improperly given in many instances resulting in more harm than good. To be effective, the proper measures of physiotherapy must be timed accurately with the changing conditions of repair that are proceeding in and about the injured joint surfaces. The pathologic changes occurring in simple fractures intersecting the joints are herewith reviewed, together with the physiotherapeutic measures that should be applied at the various stages of repair.

Crippling from fractures extending into joints is caused by stiffness, pain or weakness associated with abnormally free motion. Each of these disabling factors may result from various causes. Restriction of motion may occur because the unreduced fragments form a bone block that checks joint movement, or from excessive callus produced at the joint margins and extending into the capsule. Contractures of the capsule or tendons from fibrosis or adhesions between the various gliding structures may limit motion. Adhesions inside the joint or in the periarticular structures are common causes of stiffness.

Painful motion is disabling; it may result from poor apposition of the fragments, from scarred portions of the synovial lining or inadequate lubrication of the joint with synovial fluid. Faulty alignment of fragments that throws weight and strain upon weaker parts often causes pain on exercising the joint. Adhesions that form between the bone margins and capsule or between gliding surfaces of the joint expansions may restrict motion and produce pain. Treatment must, therefore, have as its purpose accurate reduction of the fragments, prevention of adhesions and avoidance of excessive callus formations.

The pathologic changes accompanying a fracture into a joint are not all apparent in the roentgenologic films made in two planes. It must be realized that the force sufficient to produce a fracture, also injures the cartilaginous surfaces, ligaments and capsule, and permits bleeding into the joint cavity. When a direct blow has caused the fracture, the skin and subcutaneous tissues have been contused and hemorrhage into the periarticular structures, fat pads, and synovial membranes probably has occurred.

During the first twelve or twenty-four hours after injury, marked hyperemia of the bone and periarticular structures occurs and is followed by an increased out-pouring of synovial fluid, leukocytic infiltration and edema of the soft tissues about the joint. Immediately following these changes there is clotting of the blood which has escaped into the soft tissues, while that which has entered the joint fails to clot unless the capsule and synovial membranes have been lacerated.

INDICATIONS FOR TREATMENT

Bearing these changes in mind, the indications for treatment in this early stage are: early, accurate reduction to arrest bleeding and limit later callus formation; splinting, to immobilize the parts, check hemorrhage and relax muscular spasm; sedation, to relieve the pain; aspiration of the joint to relieve intra-articular tension; and the application of a pressure bandage about the joint when feasible, further to check bleeding and to hasten absorption of the excess of synovial fluid that is being formed. When the foregoing measures have been carried out, the part should be elevated to reduce congestion and edema. Considerable swelling and pain usually occur for the first two or three days and during this time no constriction must take place above the site of fracture.

The reparative processes that have begun immediately after injury and which proceed slowly through the third or fourth week may be summarized briefly as follows:

1. Formation of a fibrin network in the

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clotted blood in the periarticular structures and between bone fragments.

2. Ingrowth of fibroblasts from surrounding connective tissue and invasion of the mass with new vessels to form granulation tissue.

3. These changes are accompanied by phagocytosis and the beginning absorption of calcium from the fractured bone ends.

4. About the tenth to the fourteenth day deposition of calcium in the granulation tissue begins and continues until about the fourth week, during which time soft callus with irregular bone trabeculae is formed.

5. About the third or fourth week resorption of the soft callus begins and it is replaced with the permanent hard callus.

Because the blood supply to cancellous bone is abundant and the spaces are relatively wide, repair of fractures near the joints proceeds more rapidly than when they occur in the shaft. There is some deposition of calcium and formation of early callus, beginning about the second week and continuing for two or three weeks, but there is seldom any roentgenologic evidence of this new bone formation and calcification until several weeks later. Our judgment of the amount of motion and strain to be thrown on to this newly formed callus must, therefore, be guided by general knowledge of the pathologic changes together with the symptoms of gradually disappearing tenderness and swelling rather than by interpretation of the x-ray shadows.

Based on knowledge of the reparative changes that occur during the first three or four weeks, the indication for treatment after early reduction and splinting is to continue complete immobilization. It is obvious that care of the fracture must take precedence over the soft tissue injuries which otherwise might be given heat and massage at an earlier date. Administration of diathermy to the splinted parts has proved impractical. Pain and swelling usually diminish after three to seven days and the circulation then can be improved by alternately raising and lowering the injured limb for short periods of time. Voluntary movements of the joints distal to the injury that are not included in the splint, may be started at the same time and is a most valuable physiotherapeutic measure. Alternately contracting and relaxing muscles in the neighborhood of the joint accomplishes a sort of internal massage that assists the return of venous blood toward the heart, improves lymphatic drainage, thus decreasing edema and retaining the proper tonus in the splinted muscles.

After the third or fourth week the bone fragments are knitted strongly enough to withstand limited ranges of gentle motion. The callus is yet soft and will yield to vigorous, voluntary efforts or may be crushed if levered against the opposing joint surface by forcible passive movements. Muscular atrophy, weakness, and perhaps mild contractures, the results of splinting, must be cared for at this time. Fibrosis of the capsule, tendons, muscles and periosteum; diminished synovial secretion, intra-articular adhesions, the persistence of dead cells of bone and cartilage are all present in some degree and must be dealt with when treating the part. These pathologic changes can be improved or eliminated by the use of some form of heat that increases the blood supply to the part, by assisting lymphatic drainage with light massage and bandaging, by avoiding forcible movements and weight bearing and, lastly, by voluntary contractions of the weakened muscles. Deficient secretion of synovial fluid is stimulated best by often repeated movements, preferably voluntary or active joint motion. Absorption of intra- and periarticular adhesions is accomplished by all the foregoing measures, consistently carried out over a considerable period of time. There is no magic melting of fibrous bands by elevating the temperature of the part with diathermy and no forcible manipulation can be so expertly given that it will not be dangerous.

REASONS FOR THE USE OF HEAT

The purpose of heat is to flush the circulation about the joint and throughout the extremity. There is no indication to bake, cook, melt or weld any part of the joint. Diathermy, with its short and long waves producing heat by resistance of the tissue cells to an electric current of high

frequency, will improve the blood supply about a joint. It has no special virtue, possesses many limitations and no form is without some danger. Radiant heat, supplied by lamps of various sizes and patterns, can be applied to only one side of the joint at a time. Dry heat, well distributed, produces a very good flushing of the circulation, but any apparatus which distributes heat properly is usually quite cumbersome. Moist heat, which can be supplied by encasing the limb in thick, moist bath towels is a very excellent method of improving the blood supply to an injured joint. In the long run, immersion of the entire limb in a warm bath for fifteen or twenty minutes is probably the simplest and most effective method that can be used. It, moreover, has the virtue of being easily applied in the patient's home.

Following a warm bath the measure which will further promote the blood supply, relax muscles and increase lymphatic drainage, is massage. The principles governing its administration should be: First, to place the injured part in a relaxed, comfortable position, and secondly, to use gentle stroking from the distal parts towards the heart, passing lightly and smoothingly over the injured region. There is no place for kneading, tapotement or vibratory movements of any kind and only harm can come from such vigorous types of massage. A most helpful measure of treatment at this period which supplements heat and massage is bandaging of the entire extremity with a smoothly applied, elastic bandage. This should be worn only while the part is in active use and dependent and may be removed when the patient lies down. The bandaging prevents excessive edema, swelling and congestion, thus aids the circulation and is most grateful to the patient.

THE QUESTION OF MOTION

The last and most important consideration with reference to physiotherapeutic measures is motion of the injured joint at about the fourth week when callus is yet soft and not well calcified. Should one use active or passive movements? Active movements are those which are initiated and controlled by the patient, and are automatically checked when they cause pain. Passive motion, on the other hand, given by the operator may not always be stopped at the point of pain, and may produce damage. The muscles, weakened from disuse and splinting, rapidly regain strength through voluntary exercise by the patient; they benefit little, if any, by movements administered by the operator. The patient's sense of pain gives an automatic check which prevents his throwing too much strain upon soft callus and when he is left to perform his own movements, we can be reasonably sure that no harm will come to the newly forming bone. When the operator is administering motion, however, it is very easy for him to crowd the motion a little too far and open a fracture line or compress the soft callus. The patient, when making voluntary movements, will carry them to the point of mildly stretching the adhesions but will always stop short of tearing them because of pain, but when a technician employs forced movements, adhesions may be torn, hemorrhage occurs and new fibrous bands are formed. He who learns to initiate and carry out his own joint movements becomes self reliant, gains confidence and loses fear, whereas one who is treated solely with passive motion becomes dependent upon the physiotherapist, dreads his treatment, fears the pain, develops resistive movements and makes poor progress. The patient who learns to make voluntary movements under the direction of a skilled instructor can soon be trusted to repeat the movements frequently during the day or may even begin occupational therapy at a much earlier date than the one who has come to rely entirely upon his treatments at the hospital or office and keeps his injured part carefully covered between visits.

The simplest physiotherapeutic measures fitted in properly during the various stages of joint repair following early and accurate reduction of the fractured surfaces will always bring about best possible use of the joint. There is no short cut to a good result by way of forcible manipulations, faradic stimulation or the use of mechanical apparatus of any kind. Joint function is re-

gained most rapidly when the patient is carefully taught to employ his own muscles to effect the maximum range of motion as often as possible without producing pain and swelling of the joint. Restoration of strength and motion is further hastened when he can be persuaded to use that part freely in some light occupation which will keep him interested and actively at work most of the day.

SUMMARY

This conception of the physiotherapeutic measures that are of real value is a far cry from the racketeering methods all too common today. Week after week of valuable time is lost when patients report every second day for a so-called physiotherapy treatment consisting of diathermy or radiant heat applied to the joint for twenty minutes, followed by bathing it a few seconds with alcohol and returning it to a splint. Untold harm is done when the patient becomes discouraged and his physician so desperate that he then resorts to the "pump handle" methods of manipulating the joint, with or without an anesthetic. Such forcible and illogical measures for relieving stiffness following fractures into joints originated with the charlatan and quack and should be left entirely to them. Physicians and surgeons worthy of the name should get away from machine made, automatic types of so-called physiotherapy, and apply only the simple, time-honored measures with judgment, perseverance and patience.

DISCUSSION

Dr. R. H. Alldredge (New Orleans): Dr. Caldwell has covered the subject so completely that there is little left to be said. There are a few points, however, which he has already mentioned, that I would like to re-emphasize at this time.

In the first place, early, accurate reduction of joint fractures is of prime importance and no form or amount of physiotherapy can take the place of accurate reduction. If possible, of course, closed reduction should be carried out, but open reduction should be resorted to when indicated. One still finds certain individuals who postpone reduction of fractures because of the presence of swelling. Immediate reduction in the presence of swelling is the quickest way to reduce swelling and bring about a physiologic state of affairs.

Adequate immobilization of the joint following reduction is absolutely essential. The least amount of motion at the site of fracture causes more bleeding and trauma to the part and more injury which has to be repaired.

Physiotherapy in children has no place whatsoever. The reparative processes of nature bring about normal physiologic function.

There is one other point that I would like to mention. In connection with legal cases, it is very important to prevent these individuals from having too much physiotherapy. We should insist on their assuming their part of the responsibility for regaining active motion. If this is not done there is a possibility that they will develop a neurosis which may be more difficult to handle than the original injury.

Dr. Guy A. Caldwell (In conclusion): I wish to thank Dr. Alldredge for adding an important point with reference to physiotherapy in children's fractures. These present an entirely different problem in after care. Children's fractures heal very rapidly and they can hardly be kept from actively using the part to the maximum extent and there accomplish their own physiotherapy. When we try to help we do too much stretching and pulling which hurts and irritates the joint and causes excess callus formation. Children uniformly do so well without intervention that we have come to believe that physiotherapy has no place in the treatment of their fractures.

Dr. Murray, in his work at the Presbyterian Hospital in New York, advocates the use of physiotherapy very early in the treatment of fractures, prescribing certain active exercises at frequent intervals after the first or second day and through the third or fourth week. I suggested that this is the period for complete immobilization and little in the way of physiotherapeutic measures can be used. Dr. Murray has an experienced team of co-workers to carry out his plan of treatment. Early, active movements are permitted under expert supervision in the first few days and the fractured part is put up in balanced traction to expedite such movements. Such treatments are confined, however, to shaft fractures (not intersecting the joints) in which operation has been done and internal fixation applied to two sides of the bone. The same plan of treatment cannot be considered for joint fractures in which internal fixation is seldom used and is always insecure even when most carefully applied.

THE MORE COMMON FRACTURES OF THE BONES OF THE HAND*

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The more common simple fractures of the hand have received less attention than they deserve. The loss of proper function of the hand is a serious handicap. In fractures of the hand this loss of function can be reduced to a minimum when the four R's of fractures, that is recognition, reduction, retention and rehabilitation are performed correctly.

A surgeon, on diagnosing a fracture of a finger, usually thinks that he has a minor condition to care for and all too often merely places a tongue depressor or a padded board on the anterior surface of the member, irrespective of the fracture site, and feels confident that nature will do the rest.

Let me first plead for the free use of the x-ray in the diagnosis of these fractures. Many cases of fracture are misinterpreted as sprains clinically and therefore remain unreduced. In all doubtful cases we should explain to the patient the importance of having an x-ray plate made, and let the decision rest with him as to whether or not it is done. This is for the benefit of the patient and also for the protection of the physician from a medico-legal standpoint.

In the reduction and retention of these fractures we should have knowledge of the part to be treated. By knowing the specific muscles controlling the fragments we are able to reduce and maintain the fracture in reduction. The anatomy of the part is not merely of academic interest but rather of sound practical use. We are dealing with small long bones. The necessity of traction in the proper treatment of oblique fractures of other long bones such as the femur is recognized and we should recognize the like necessity of similar treatment of oblique fractures of the long bones of the hand.

The general principles in the immediate reduction of fractures should be known. They are: (1) The deformity is increased; (2) traction on the one fragment and countertraction on the other fragment is effected; (3) by thumb and finger manipulation the edges of the two fragments are brought into contact; (4) maintaining traction, the angulation is reduced, thereby bringing the fragments into correct alignment.

FRACTURES OF THE METACARPALS

Bennett's Fracture: This is an oblique articular fracture of the base of the first metacarpal bone with dorsal and lateral displacement of the shaft and overriding of the fragments. This is usually produced by axial compression of the bone.

This fracture is reduced by traction on the thumb and finger manipulation at the base of the thumb. In order to prevent recurrence of the displacement the thumb should be placed in traction in abduction. This can be done by incorporating a stiff wire loop in a plaster cast placed on the forearm, running up to the metacarpophalangeal joints. The wire loop should be narrow and extend beyond, and in line with the abducted thumb. Rubber bands make traction from the end of the wire loop to a steel needle or short Kirschner wire inserted through the pulp of the distal end of the thumb. Traction should be maintained for three weeks, followed by immobilization for one or two weeks longer. An unreduced Bennett's fracture is likely to produce a marked disability of the hand due to the involvement of the carpo-metacarpal joint.

The use of straw finger cots for traction should be mentioned only for condemnation.

Transverse Fractures of the First Metacarpal: In this fracture there is a definite tendency to an outward bowing. This injury is usually due to direct violence. After reduction by manipulation this fracture is easily and comfortably held in reduction by a figure of eight plaster cast around the

*Read before the sixtieth annual meeting of the Louisiana State Medical Society at Alexandria, La., April 25, 1939.

thumb and wrist with the thumb in extreme abduction.

Fractures of the Inner Metacarpals: In transverse fractures of these bones the displacement depends partly upon the fracturing force but chiefly upon the muscle pull. The interosseous muscles are attached on either side of the base of the metacarpal and course distally across the fracture site to insert at the base of the proximal phalanx. The metacarpal bone has a normal dorsal convexity. This convexity and the strong flexion action of the interosseous muscles acting as bow strings produce a dorsal angulation at the site of the fracture. The head of the metacarpal is displaced anteriorly into the palm of the hand. If the fracture is not properly reduced there remains not only an unsightly tumor on the dorsum of the hand but also the head of the bone projects into the palm. These prevent firm grasping of objects and produce a permanent partial disability.

Oblique fractures of these bones require traction to maintain reduction. This can be done by using a modified banjo splint incorporated in a plaster cast on the forearm extending to the metacarpo-phalangeal joints, holding the wrist in slight cockup position.

Transverse fractures of the neck of the metacarpals are called "punch fractures," and are usually produced by a blow with the fist. The displacement is the same as in transverse fractures of the shaft. There is added to this an impaction of the fragments. After this impaction is broken up the reduction and retention are the same as in transverse fractures of the shaft.

The fractures of the metacarpals are frequently splinted by flexing the fingers over a ball or roll bandage in the palm. By referring to the displacement of the fragments and the action of the attached muscles we will see that this is plainly incorrect in that it serves only to increase the deformity.

PROXIMAL PHALANGEAL FRACTURES

The deformity in these fractures is fairly constant, regardless of the site of the fracture or the force of the blow. They are particularly difficult due to the opposing actions of the muscles acting on the fragments and producing the deformity. There are the interosseous muscles producing flexion of the proximal fragment. The lumbricals, through their attachment to the fascia and ligaments of the dorsal surface of the middle phalanx, acting as extensors of the finger, produce a marked dorsal angulation of the distal fragment. Thus there is produced an anterior angulation at the fracture site. The long extensors and flexors of the fingers produce more marked anterior angulation at the fracture site after the shorter muscles have initiated the angulation. In this position the angulation protrudes anteriorly, causing the flexor tendons to play over the prominence and later adhesions and pressure interfere with the action of the tendons. If this deformity is not reduced and allowed to unite in this position the portion of the finger distal to the fracture cannot be brought into flexion but can be extended beyond normal extension. The finger cannot be brought into contact with the palm and when a heavy object is lifted it is found that part of the grip is lost and that pain is produced at the site of the old fracture.

Reduction is performed by following the general principles of reduction of long bones. After reduction the fragments are best maintained in this position by holding the fractured finger with the adjoining finger flexed over a roller bandage placed in the palm or some other similar shaped object. This brings the distal fragment into alignment with the flexed proximal fragment. In this position the fracture site does not tend to buckle into the original anterior angulation deformity. If an attempt is made to splint the finger, using a dorsal board splint holding the finger in extension, it will be found that the fracture cannot be held in reduction but will retain an anterior angulation at the fracture site. For that reason straight splinting is not to be employed. The immobilization in the flexed position should be maintained for two to three weeks at which time straight splint-

ing can be used for an additional week or two.

Oblique fractures require traction to maintain reduction as in other long bones. The finger should be flexed at the metacarpo-phalangeal joint during this traction.

DROP OR MALLET FINGER

This is an avulsion of the tendon of the extensor digitorum from its insertion on the dorsal surface of the base of the terminal phalanx. The x-ray usually shows a small chip of bone has been pulled off by the tendon. It is due to a sudden forceful flexion of the extended finger such as a baseball hitting the end of the extended finger. It is sometimes called a "baseball finger." The extensor tendon retracts, taking with it the small chip of the phalanx. This is reduced by hyperextending the terminal phalanx on the extended finger to approximate the fragments. It can be maintained in reduction by a padded metal trough splint bent in the shape of the hyperextended finger. Hyperextension should be continued for about four weeks. If the fracture is not reduced there will be a permanent inability to extend fully the terminal phalanx of the finger.

Rehabilitation of the fractured hand should be kept in mind during the treatment of the acute fracture and not be neglected until after bony union is evident. This is especially true in the older patient in whom disability following hand fractures is much more likely to occur and to a greater extent. Resultant limitation of motion can be markedly reduced by applying the original fixation only to that portion of the hand necessary to fix the fragments of the bone, permitting and even insisting that the patient actively move all joints not immobilized by the splint. Splints should be removed as soon as practicable considering the patient's ability to follow instructions concerning the protection the part demands. After the splints can be safely removed, active physiotherapy should be instituted. Valuable exercises and other forms of treatment can be carried out at home. Warm water soaks to the entire hand followed by massage and kneading of the indurated tissues about the joints with active and passive movements will bring about remarkable recovery of normal motion. Forced motion under an anesthetic in joints having limitation of motion from fibrosis or shortening of the joint capsule is not to be used.

SUMMARY

The degree of rehabilitation following fractures of the hand is directly dependent upon the patient's earnest and sincere desire to regain full usefulness of his hand and his willingness to cooperate.

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DISCUSSION

Dr. Guy A. Caldwell (New Orleans): Dr. Tisdale has given an excellent, clear, concise review of the principles of treatment of the more common fractures of the hand.

I should like to emphasize the advantages of immediate reduction by manipulation and careful splinting along the lines suggested. One should not expect the splint to accomplish reduction, even when there is an oblique fracture with overriding and some form of traction is employed. It is always well to break up impaction and with digital manipulation, aided by traction if necessary, approximate the fragments and check their position with the x-ray. If the position be satisfactory, then apply the approximate splint and re-check the position with the x-ray.

Where reduction cannot be obtained by manipulation, immediate open reduction should be done. Open reduction of fractures of phalanges after three to six weeks gives disappointing results as a rule. Dr. Tisdale has referred to the forward angulation which usually occurs with inclusion of the flexor tendons in callus that forms in the course of two or three weeks. When an open reduction is then attempted, the approach is difficult. The phalangeal nerves are easily injured and trophic disturbances frequently follow. When the flexor tendons are finally freed from callus, the sheath is usually lost and adhesions form which limit the usefulness of the fingers even when good alignment and union of fragments has been se-

cured. Most of these difficulties can be avoided by doing the open reduction shortly after injury. If careful manipulations are done and controlled by x-ray examination, if splinting be intelligently planned and carefully applied along the principles outlined by the essayist, and if close supervision of the splinting be maintained for three weeks, the need for open reductions would almost never occur.

Dr. Tisdale did not attempt to discuss the care of compound fractures of the hand. These are very common and present our greatest problem. Thorough cleansing, careful debridement and suture, if contamination has not been too serious, followed by splinting with traction planned to permit access to the wound is essential. To accomplish these ends one has to exercise considerable ingenuity and care, but it is usually possible and the principles for controlling the displacements are the same as illustrated by the essayist.

Dr. T. M. Oxford (Shreveport): I think Dr. Tisdale has thoroughly covered the subject of fractures of the hand. One point I want to bring out somewhat in disagreement with the method he has for traction, that is, the use of a pin or needle through the pulp of the finger. We have used that form of traction off and on and occasionally we have gotten necrosis of the end of the finger or, if placed a little bit further anteriorly, the pin cut its way out and produced a sensitive end of the finger later on. Particularly in compensation cases, where patients have a tendency to prolong their disability, they will complain unduly of a sensitive end of the finger and perhaps they do have some right to complain. I know it is customary to use the pin or needle through the pulp because the pulp is tough. On several occasions we have used the pin or needle through the distal phalanx and it holds just as well. I think often you need pretty heavy traction to maintain reduction and you can get this traction a little more satisfactorily with the needle or pin through the bone. This is the only point I have in mind.

Dr. Tisdale (In conclusion): I wish to emphasize also that in the treatment of compound fractures of the finger we see cases in which the wound is treated but no thought is given to the fracture. Consequently when you do get union and healing of the soft parts you have great deformity which frequently necessitates an open reduction. We should maintain traction on these cases while the soft parts are healing and the fractures are uniting.

I was afraid, Dr. Oxford, that you were going to say you opposed the use of pins through the fingers but I have no argument concerning the use of pins either through the pulp or through the bone of the terminal phalanx. In reference to traction, I have not been able to get adhesive traction on the skin of the finger to put sufficient pull and I do prefer using pins.

ACUTE PERFORATED GASTRIC AND DUODENAL ULCER*

CHARLES B. ODOM, M. D.†
AND
MICHAEL DEBAKEY, M. D.‡
NEW ORLEANS

Undoubtedly one of the most serious and important complications of gastroduodenal ulceration is acute perforation. Of even greater significance is the fact that apparently it is occurring with greater frequency. In spite of voluminous investigations, the etiology of this condition remains yet unestablished,[1] consequently considerable divergence of opinion exists concerning its therapy. Even the type of surgical procedure advocated in such a complication as acute perforation varies remarkably. With these views in mind and in an attempt to determine some of the contributing factors in the mortality, the authors have analyzed the cases at the Charity Hospital in New Orleans.

INCIDENCE AT CHARITY HOSPITAL

During the ten year period, 1929 to 1938 inclusive, 2607 cases diagnosed as peptic ulcer were admitted to this institution. Of this number, there were 211 cases of acute perforated ulcer, an incidence of approximately 8 per cent. Whereas the incidence of peptic ulcer in general apparently is increasing, the frequency of acute perforation is becoming disproportionately greater. Thus, although the percentage of ulcers per 100,000 admissions to the hospital increased annually from 0.0444, in 1929, to 0.0614, in 1938, the comparable figures for the acute perforations were 0.0139 and 0.0782. In other words, the increase in ulcer in general over a ten year period was approximately one and a half times, whereas the increase in acute perforations was approximately seven times. This has been

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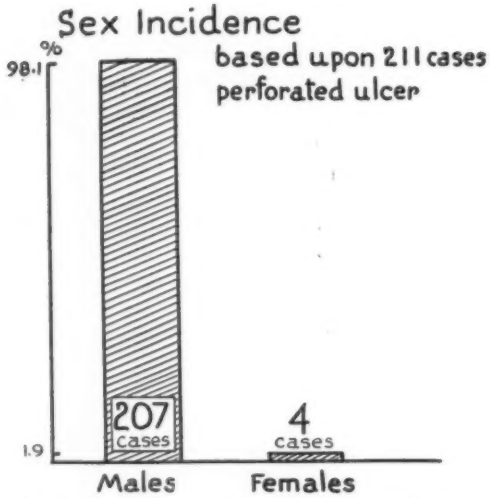
observed by others and various attempts have been made to explain it.[2, 3, 4, 5] The two most obvious possible explanations are increasing accuracy in diagnosis and increasing strain upon mental, physical, and dietary factors.

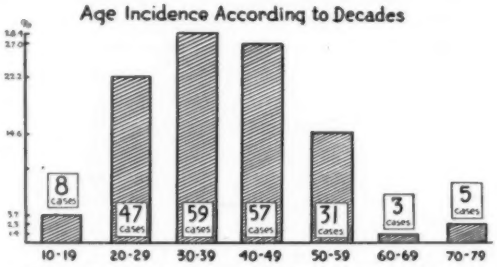
The sex incidence reveals a marked preponderance in the male. There were 207 (98.1 per cent) males and four (1.9 per cent) females (Graph I). This has been



Graph I. Graphic representation of sex incidences in our cases of perforated ulcers.

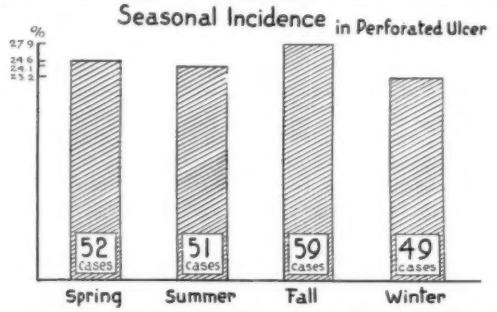
generally recognized and no satisfactory explanation can be offered. Contrary to the general impression that perforated ulcer occurs rarely in the negro, the race incidence in this series reveals an almost equal frequency in white and colored patients; there were 128 (60.6 per cent) white and 83 (39.3 per cent) colored. Whereas this would seem to indicate a greater incidence in the white race, it must be realized that the incidence of total admission of white patients is greater than that of colored. Accordingly, if the respective incidences are based upon corresponding per 100,000 admissions these figures are found to be 0.0403 per cent and 0.0364 per cent.

Peptic ulcer is definitely a disease of middle life and the age incidence of the complication, acute perforation, is correspondingly in this period. Thus, almost 80 per cent of the cases in this series occurred between the ages of 20 and 50 years (Graph II). Whereas some observers have



Graph II. Graphic representation of age incidence according to decades.

called attention to a distinct seasonal incidence in perforated ulcer,[6, 7, 8] others have reported no significant seasonal variations.[9, 10, 11] On the basis of the present study we are forced to agree with the latter experience (Graph III).



Graph III. Graphic representation of seasonal incidence in our cases of perforated ulcers.

CLINICAL GROUPING

In reviewing the histories of these cases it was possible to divide them into three distinct groups. The largest group, comprising 159 cases (75.3 per cent) of the 211 cases, was characterized by long histories of gastric disturbances. Usually the patients had had numerous and varied types of medical therapy, none of which was adequate. In contradistinction to the appearance of the ulcer at operation in the patients of the other groups, in these the ulcer was usually larger and more calloused with indurated edges. The second group, which included 23 cases (11 per cent), was characterized by histories of gastric dis-

tress over a relatively short period of time, usually not more than two or three weeks. The third group, embracing 29 cases (13.6 per cent), consisted of patients who gave histories of no previous gastric disturbances.

Whereas it is rare for ulcers to perforate during the period when adequate therapy is being administered, it is interesting that in this series there were three cases in which perforation occurred while the patients were in the hospital and on a Sippy regimen. There were two patients with histories of previous perforations.

The clinical manifestations presented on admission varied depending upon the length of time following the perforation. Accordingly, the cases may be grouped into three stages: First, patients observed within six hours after perforation in whom prostration is a prominent feature and before peritonitis has become manifest. Of the 211 cases, 82 (42.7 per cent) were in this group. The most prominent symptom was agonizing abdominal pain, usually constant in character. In 60 cases (28.4 per cent), the pain was generalized over the entire abdomen, in 115 (54.5 per cent) the pain was localized to the epigastrium, and in 6 (2.8 per cent) cases the pain was more marked in the right lower quadrant of the abdomen. Referred pain to one or both shoulders was present in 32 cases (15.1 per cent). Characteristically the patients in this first stage have an anxious expression, hold themselves rigid, and are afraid to move. The skin is usually cold and clammy, and in this series the temperature ranged between 97 and 98°. The pulse was usually increased in rate but had good volume. The respiration was shallow and costal in type due to fixation of the diaphragm. The characteristic board-like rigidity of the abdomen was present in the majority of these cases and is considered one of the most significant signs of ruptured peptic ulcer.

The second stage develops from six to twelve hours following the perforation. It has been described as the reaction stage or the stage of delusion because the patient begins to feel better and the condition appears to improve. The pulse becomes less rapid, the temperature rises to normal or slightly above normal, and the pain becomes less marked. However, abdominal rigidity remains prominent, respiration continues to be costal in type, and if the condition is allowed to progress without surgical intervention, the patient soon passes over into the third stage, or stage of peritonitis. In this series, there were 66 (31.2 per cent) patients in this second stage.

In the third stage are grouped those patients seen twelve hours or more after the perforation when peritonitis has developed. There were 44 (20.8 per cent) of our cases in this stage. Characteristically, abdominal rigidity becomes less marked and ileus more prominent. The pulse rate begins to rise rapidly as well as the temperature. Singultus is not infrequently present indicating diaphragmatic irritation or toxicity. The tongue and mouth become dry and dehydration becomes obvious. Later the characteristic features of marked peritonitis become very prominent. In this stage the prognosis is extremely grave.

DIAGNOSIS

The diagnosis in perforated gastroduodenal ulceration is usually not difficult if the condition is considered. Of the 211 cases in this series, 196 (92.4 per cent) were correctly diagnosed preoperatively. The diagnoses in the remaining 15 cases were as follows: Acute appendicitis, 9; acute hemorrhagic pancreatitis, 1; acute intestinal obstruction, 1; acute cholecystitis, 2; mesenteric thrombosis, 1; ruptured ectopic pregnancy, 1.

Aside from these surgical conditions, the differential diagnosis should also include the following medical conditions: Diaphragmatic pleurisy, ptomaine poisoning, dissecting aneurysm of the thoracic or abdominal aorta, lead colic, acute lobar pneumonia, coronary thrombosis, renal colic, and acute alcoholism. It is interesting to observe that in this series a number of the perforations occurred following over-indulgence in either alcohol or food.

Undoubtedly, one of the most reliable diagnostic aids is the demonstration of air

beneath the diaphragm by roentgenographic examination. This is shown by the fact that in 164 patients in whom this examination was made, 106 (64.6 per cent) showed air beneath the diaphragm. This diagnostic procedure was first suggested by Popper[12] in 1915. More recently Vaughan and Singer[13] have emphasized its value and reported roentgenographically demonstrable pneumoperitoneum in 54 of 63 cases. As a possible means of increasing the incidence of such positive roentgenographic evidence and consequently increasing the accuracy of diagnosis, the authors suggest the introduction of a stomach tube, aspiration of the stomach contents, and the injection of 20 to 30 c. c. of air into the stomach. Immediately following this procedure, the roentgenogram is made in the erect position. Obviously this is not advocated as a routine procedure but only in those cases in which acute perforated ulcer is suspected and in which plain roentgenograms reveal no pneumoperitoneum.

Although the ulcer is characteristically located on the anterior wall of the stomach or the duodenum near the pylorus, it is frequently difficult to determine whether it is situated on the gastric or duodenal side of the pylorus. The pyloric vein of Mayo is frequently obliterated due to the distortion of the pylorus by the ulcer. In our series, the pyloric and duodenal ulcers were more frequently encountered than the gastric (Table I). This was also observed in a large series of collected cases.[14]

TABLE I

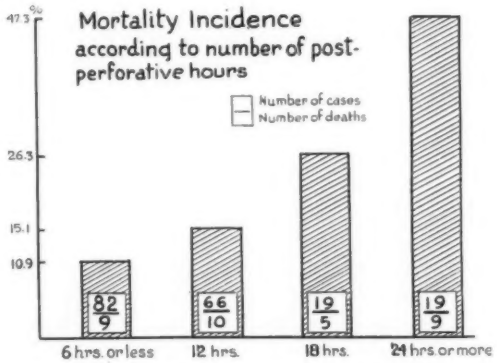
GASTRIC			
1.	Cardiac	2	1.03%
2.	Lesser curvature	85	44.2 %
3.	Greater curvature	5	2.5 %
	Total	92	
DUODENAL			
1.	Pyloric	22	11.3 %
2.	First duodenum	78	40.4 %
3.	Second duodenum	1	.51%
	Total	101	

TYPE OF ANESTHETIC

The type of anesthetic which should be employed in these cases deserves special consideration. That this is an important factor in the mortality is clearly demonstrated by this series. Whereas of seven patients in whom epidural block[15] and 154 patients in whom spinal anesthesia was used, the mortality incidences were 0 per cent and 15.7 per cent respectively; of 43 patients in whom general anesthesia and five patients in whom local analgesia were employed the respective death rates were 22.2 per cent and 60 per cent. It is our opinion that a block anesthetic is preferable because complete relaxation is obtained, permitting better exposure and less trauma.

OPERATIVE TREATMENT

The treatment of perforated gastric ulcer is immediate operation. It is our opinion that conservative therapy has no place in the treatment of acute perforations. In the only two cases in this series in which conservative therapy was employed, death occurred. Moreover, delay in operation undoubtedly increases mortality. This has been generally recognized and is demonstrated convincingly by this series. Thus of 82 patients operated upon within the first six postoperative hours, only nine (10.9 per cent) died; of 66 patients operated upon during the second six postperforative hours, ten (15.1 per cent) died; of 19 patients operated upon within 12 to 18 hours after the perforation, five (26.3 per cent) died; and of 19 patients operated upon 18 hours or more after the perforation, nine (47.3 per cent) died (Graph IV).



Graph IV. Graphic representation of mortality incidence in our cases according to postperforative hours.

On the other hand, such relaxation is difficult to effect with a general anesthetic because of the marked rigidity present in this condition. Moreover, the toxicity of a general anesthetic is an additional burden to an already damaged liver.

TYPE OF OPERATION

The type of operative procedure advocated varies from simple closure to gastric resection. The American and English surgeons prefer the more conservative simpler procedures, whereas the continental European surgeons consider the radical procedures more advantageous. It is our opinion that the operation of choice in these cases is simple closure. These patients may be considered surgical emergencies; they are frequently not in the best condition for prolonged extensive procedures and delay for preparation is not permissible. Consequently the procedure which effects adequate repair of the defect most expediently seems the most rational. Obviously, this can be accomplished best by simple closure. Two rows of interrupted silk sutures are used. The sutures in the first row are placed through the edges of the ulcer and those of the second consist of inverting Lembert sutures. These should be placed so that upon tying the sutures the edges are approximated at right angles to the longitudinal axis of the stomach or duodenum. In those cases in which the edges of the ulcer are calloused and indurated, a triangular excision with approximation, according to Heinicke-Miculicz principle, is considered desirable. The use of an omental graft as reinforcement is worth while if conveniently performed. In those cases in which constriction at the pylorus is likely to result, some form of pyloroplasty should be done rather than a gastroenterostomy. On the basis of clinical and experimental investigations,[16-19] we consider gastroenterostomy undesirable except in those persons in whom the gastric acidity is below the normal level. In this series, the type of operative procedure was indubitably an important factor in the mortality. Whereas of the 200 patients in whom simple closure was used, only 33 (16.5 per cent) died, of the seven patients in whom the more radical procedures were employed, three (42.8 per cent) died.

DRAINAGE

For reasons which are not apparent, the question of drainage of the peritoneal cavity still seems to be controversial in the literature. It has been conclusively demonstrated that it is impossible to drain the peritoneal cavity in the case of generalized peritonitis. No matter what type of drain is employed, within eight to ten hours after it is placed in the peritoneal cavity it becomes completely walled off by fibrinous adhesions and all that is accomplished is drainage of the area in which the drain is situated. Consequently it seems irrational to place drains in the peritoneal cavity of patients with perforated ulcer in whom general peritonitis has developed. Equally irrational is the drainage of those persons operated upon before the peritonitis has become manifest, because if contamination of the peritoneal cavity has occurred, the drains can serve no useful purpose. On the basis of these fundamental principles we do not advocate drainage except in those patients in whom residual peritoneal abscesses develop. However, drainage of the abdominal wall should always be done because contamination of the wound almost invariably occurs. Thin strips of soft rubber dam should be used and should be placed down to the transversalis fascia and peritoneum, because if the drain is placed only in the subcutaneous tissue, the possibility of an abscess developing in the abdominal wound between the rectus muscle and the posterior rectus sheath may be overlooked. As emphasized by Ochsner,[20] the danger of this possibility lies in the fact that the abscess may rupture into the peritoneal cavity rather than to the outside. The importance of drainage of the wound is shown by the fact that it was by far the most frequent complication in our series, occurring in 61 cases (28.9 per cent). Moreover, there were eight patients in this group in whom death was attributable to the wound infection.

Aside from wound infection, probably the most significant complications are per-

itonitis and pulmonary affections. There were 26 patients in this series with generalized peritonitis, of whom 24 died; 16 patients with localized periontitis, of whom nine died. Pulmonary affections occurred in 24 patients, with 17 deaths. Ileus was a complicating factor in five patients, of whom four died; hemorrhage occurred in three patients, all of whom died. Wound evisceration developed in eight patients, three of whom died. Parotitis developed in one patient who died. There were 13 patients in this series with positive Wassermanns, four of whom died, and two patients with tuberculosis and one with diabetes, all of whom died.

SUMMARY

1. During the ten year period, 1929 to 1938 inclusive, 2607 cases diagnosed as peptic ulcer were admitted to the Charity Hospital in New Orleans. Of this number, there were 211 cases of acute perforated ulcer, an incidence of approximately 8 per cent. A statistical analysis of these latter cases is presented.

2. Whereas over a ten year period the incidence of ulcer in general has increased approximately one and a half times, acute perforations have increased about seven times.

3. There were 207 (98.1 per cent) males and four (19 per cent) females.

4. Although there were 128 (60.6 per cent) white and 83 (39.3 per cent) colored patients, because of the proportionately greater number of total white admissions, the race incidence was relatively equal.

5. There were no significant seasonal variations.

6. The majority of patients were between 20 and 50 years of age.

7. Whereas most (75.3 per cent) of the patients had long histories of gastric disturbances, in some (13.6 per cent) the manifestations of the acute perforation were the first indications of the ulcer.

8. The characteristic clinical features in these cases are reviewed. A correct preoperative diagnosis was made in 196 (92.4 per cent) of 211 cases.

9. Roentgenographic evidence of pneumoperitoneum is a valuable diagnostic procedure. In 164 cases in which this examination was made 106 (64.6 per cent) showed air beneath the diaphragm. As a means of increasing this incidence we suggest aspiration of the stomach contents by a stomach tube and introduction of 20 to 30 c. c. of air into the stomach.

10. Characteristically, perforated ulcers occur on the anterior wall of the stomach or duodenum near the pylorus. In our series there were 92 gastric, 22 pyloric, and 79 duodenal ulcers.

11. The prognosis depends upon a number of factors the most important of which are: (1) The period elapsing between the occurrence of the perforation and the institution of treatment; (2) the type of anesthetic employed; (3) the type of operative procedure; and (4) the development of complications. Of 82 patients operated upon within the first six postperforative hours, only nine (10.9 per cent) died; of 66 patients operated upon during the second postperforative hours, ten (15.1 per cent) died; of 19 patients operated upon within 12 to 18 hours after perforation, five (26.3 per cent) died; and of 19 patients operated upon 18 hours or more after the perforation, nine (47.3 per cent) died.

12. Whereas of seven cases in which epidural block and 154 cases in which spinal anesthesia was used, the mortality incidences were 0 per cent and 15.7 per cent respectively, of 43 cases in which general anesthesia and five cases in which local analgesia were employed, the respective death rates were 22.2 per cent and 60 per cent.

13. The treatment of acute perforated ulcers is immediate operation. The operation of choice is simple closure. The use of an omental graft as reinforcement is desirable if conveniently performed. Whereas of the 200 patients in whom simple closure was used, only 33 (16.5 per cent) died; of the seven patients in whom the more radical procedures were employed, three (42.8 per cent) died.

14. The most frequent and serious complications are peritonitis and pulmonary affections. In our series there were 26 patients with generalized peritonitis with 24

(92.3 per cent) deaths and 16 patients with localized peritonitis with nine (56.2 per cent) deaths. Pulmonary affections occurred in 24 patients with 17 (70.8 per cent) deaths.

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DISCUSSION

Dr. Alton Ochsner (New Orleans): This presentation by Drs. Odom and DeBakey is indeed interesting, particularly from the standpoint of the many facts which they have emphasized. The increasing incidence of perforation of peptic ulcer is, as they have indicated, probably due to a number of factors. One might be justified in making the suggestion that the increased incidence of perforation of peptic ulcer is due to the increased incidence of smoking. It is a well known fact that smoking increases gastric acidity, and perforation of a benign ulcer in the absence of acidity is virtually unknown, so that it is reasonable that the increased acidity associated with and dependent upon smoking might be a precipitating factor in the development of perforation.

The fact that most of their patients had received inadequate conservative therapy is a definite indication that a patient with a peptic ulcer, unless he takes care of himself, is likely to develop one of the complications of which perforation is one of the most tragic.

The results which Drs. Odom and DeBakey have obtained from the use of block analgesia are of interest and clearly illustrate the necessity of complete relaxation during the operation. Undoubtedly, the use of general anesthesia and the consequent straining of the patient does a great deal of harm to these individuals, but this danger can be obviated largely by the use of novocain block.

Drs. Odom and DeBakey are to be congratulated particularly upon the high incidence of correct diagnoses being made in their series.

Dr. Sidney M. Copland (New Orleans): Drs. Odom and Bakey have reached conclusions which confirm the views of the prepondering majority of surgeons, namely that simple closure with the least possible amount of manipulation is best. Yet, other surgeons, especially in Germany, but also Trout in this country, have advocated more extensive procedures as pyloroplasty, ulcer excision or gastrectomy at the time operation is performed for the ruptured ulcer. I cannot subscribe to such views.

It is important to note that after perforation has been present for many hours, there may occur a stage wherein the abdominal wall is flaccid. This phenomenon is due to a paralysis of the abdominal reflexes and musculature after having been rigid for many hours. Drainage of the abdominal wall is absolutely essential.

Another point of great interest is the number of patients presenting themselves with a ruptured peptic ulcer who have not had any previous ulcer history.

Dr. T. J. Fleming (Shreveport): One point that should be stressed which has not been brought out is this: Remember these patients are first seen by the general practitioners. The average practitioner, when he sees a patient with pain in the abdomen, gives a couple of hypodermics, the patient is relieved and goes home well satisfied. That is why the mortality has such a high rate. When relieving the patient, bear in mind there is a condition that needs hospitalization or perhaps immediate operation. The patient should be taken to the nearest hospital. The mortality is proportioned according to the number of hours that the condition is in progress. Nothing else will help the mortality rate as much as recognizing the condition as being

a surgical one and not losing time, after relieving the patient, to get him to a sanitarium.

Just a short while ago I saw a patient with intensive pain in abdomen. I got him relieved, then he did not want to leave home. I took him to the sanitarium, however, and found a ruptured ulcer. That patient's chances would have been fatal if he had been left at home until next day, whereas he had an uneventful recovery after operation. I believe in the single closure of the perforated ulcer, and drainage.

Dr. Frederick F. Boyce (New Orleans): Dr. Odom and Dr. DeBakey have covered this subject very thoroughly, but because it is of so much interest to general surgeons, a few points might be emphasized further.

The first and most important consideration in perforated peptic ulcers is that early diagnosis leads to early intervention, and early intervention produces a high percentage of cures. The mortality rises appreciably with a delay of six hours, and rises very materially with a delay of 24 hours.

There is no conservative treatment of perforated peptic ulcer. All of us have practiced conservatism and regretted that we had. I recollect one case particularly, in which I had every reason to believe that the opening was well sealed. Two days later I saw the patient on the autopsy table. I have frequently seen at operation leakage in cases in which the omentum had attempted, but incompletely, to seal the opening. Undoubtedly nature takes care of the occasional case, but the best rule is to intervene, and that without delay.

There are wide differences of opinion as to the type of treatment to be instituted for ruptured peptic ulcer. A remarkably low mortality, some 6 per cent, has been reported from Russian clinics when rather radical operations were done. Such good results with radical surgery are not being achieved in this country, perhaps because we are not seeing our patients as early. Whatever the reason, the collected statistics for the United States show that the mortality is lowest when simple closure is done, higher when closure with gastroenterostomy is done, and highest when resection is done. Other things being equal, then, we should restrict ourselves to simple closure of the perforation in most cases.

Another important consideration is that in many instances the perforation is multiple. This so frequently happens that many surgeons of wide experience have made the unqualified statement that when one perforation is found at operation, thorough search should be made for another before the abdomen is closed. I personally lost one patient through failure to follow that rule, but I do not think I shall ever lose another because I have not searched for a second perforation.

Dr. C. B. Odom (In conclusion): The radical procedures in perforated ulcer have been advocated particularly in Europe and especially by the Germans. In a series of 775 cases collected from the Geman clinics by Graves, the mortality rate was 18.2 per cent. Judine, in Russia, reported 168 gastrectomies for perforated ulcer with a mortality rate of 6 per cent. These low mortality rates are in part due to the selection of better risks for the radical procedure and to the greater experience of these surgeons in the performance of this operative procedure. However, in this country, it is the consensus of the majority of surgeons that the simpler, more conservative procedure is one of choice.

In reference to Dr. Fleming's remarks, I do not think we should ever let a patient decide just exactly how he should be treated because that is the type of case that falls into the reaction group and those are the cases where mistakes are made. While morphine sometimes relieves pain, it is seldom that the rigid abdomen is relaxed by morphine.

A point worth noticing in these patients, which you will probably find helpful, is that the respiration will always be shallow in such patients. They do not breathe using the diaphragm. The diaphragm is fixed from irritation from the gastric lesion.

In reference to Dr. Boyce's remarks, there was one case in our series, with multiple perforation. Usually the thing that happens in multiple perforation is single ulceration through two separate points. It is rather unusual to have two separate ulcers. You should be on the lookout for them, however.

Two patients I have seen who were treated conservatively died. One patient was getting along splendidly and on the fourth day hemorrhaged to death. The ulcer sealed but a vessel had been plugged and gave way and the patient hemorrhaged to death.

PEPTIC ULCERS IN THE NEGRO*

MAURICE CAMPAGNA, M. D.

NEW ORLEANS

This statistical study of the incidence of peptic ulcer in the negro was actuated by the belief that among some of the profession the impression still prevails that this condition is rare in patients of the colored race. During my years of attendance in negro wards in Charity Hospital it has appeared to me that peptic ulcers were common enough to demand more than passing attention.

Realizing the difficulty sometimes encountered in making an accurate clinical

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diagnosis it was decided to review the experiences in the institution from two viewpoints. First it was decided to survey a number of autopsies on patients who died on our service over a period of time. For this purpose 300 autopsies were selected at random and a careful analysis was made.

AUTOPSY MATERIAL

Out of these 300 cases it was found that 35 patients or 11.3 per cent were admitted to the hospital with a major complaint of epigastric distress, that is to say that more than 11 out of every 100 died of an epigastric complaint. The autopsies showed that 13 deaths were directly caused by peptic ulcers. Expressed in percentages, 37 per cent of the patients in this series died of an ulcer either of the stomach or duodenum. The gastric ulcer predominated two to one. Four of the five duodenal ulcers had ruptured, giving a generalized peritonitis. The eight gastric ulcers were divided into pyloric and gastric proper. Three out of four of the pyloric ulcers proved to be adenocarcinomas microscopically. These three, incidentally, gave direct trauma to the abdomen as the cause of their epigastric distress.

REVIEW OF 300 AUTOPSIES

Ulcers	Average age	Duration of illness	Ruptured per cent
Duodenal	45	6 months or less	100
Gastric	58	1 year or less	12.5

11.7 per cent of patients died of an epigastric disorder; 37 per cent of epigastric disorders proved to be peptic ulcers. The gastric ulcers predominated 2 to 1. All of the duodenal ulcers had ruptured.

The age incidence was of some interest. The average age of the patients who had duodenal ulcers was 45 years; those with gastric ulcers 58 years. As a comparison the patients who died with a malignancy of the stomach in these 300 autopsies had an average longevity of 55 years.

The duodenal ulcer history was striking in that the symptoms were rather abrupt and the course rather rapid, no case in this series lasting more than six months. Fifty per cent of patients with gastric ulcers had symptoms lasting one year or longer.

CLINICAL MATERIAL

Having established fairly satisfactorily from this analysis that the incidence of ulcers was more than trivial, it was thought best to review the records in the hospital covering a period of one year. Beginning July, 1937, and ending August, 1938, there was a total of 132 patients discharged with the final diagnosis of peptic ulcers. Seventy-seven of these patients had peptic ulcers and 55 were considered as duodenal. Thirty-eight per cent of the duodenal ulcers had perforated as compared to 5 per cent perforation in the gastric. The average age of the patients with duodenal ulcers in this series was 38 years, and 42 years for the gastric. A striking comparison was noted in the number of days spent in the hospital. Patients with the duodenal ulcer remained 28 days, while those with the gastric ulcers stayed only 16 days.

The mortality is rather of interest in that five died with gastric ulcers and two died of a duodenal ulcer; these two, however, also had gastric ulcers associated with the duodenal, and death was due in both of these to a rupture of the duodenal ulcers.

The gastric contents in these patients averaged 40 free hydrochloric and a total acidity of 67 (Ewald's method). The maximum gastric contents was 80 free hydrochloric and 130 total acidity.

Probably the most consistent finding was the blood pressure, which averaged 115 systolic with 90 diastolic. Several blood pressure readings which were extremely low, because of the patient's circulatory collapse, were excluded from this calculation. All of the patients, with very minor exceptions, presented dyspeptic symptoms which in no way varied from symptoms which one finds in the white race with peptic ulcers.

A finding which surpised me was that there were only two strongly positive Wassermanns in the entire series. This is

contrary to the belief of a good many physicians that syphilis plays an active part in a great majority of stomach disorders in the negro.

Only one of the deaths was an operated case, the patient being in the hospital only a few hours. Twenty-nine per cent of the patients with duodenal ulcers were operated on and 22 per cent of those with gastric ulcers. Five patients with gastric ulcers gave a history of hematemesis as compared to two with duodenal ulcer.

Apparently this type of patient is not prone to frequent hospitalization, only 15 having given a history of previous admission into the hospital, and out of this 15, 50 per cent were admitted previously for complaints other than their peptic ulcers.

Comparing the sexes, males predominated eight to one. The ages were approximately even, the men being 40 and the women 36.

SUMMARY

The autopsy records of 300 consecutive cases have been surveyed. Analysis has been made of 132 patients in whom peptic ulcer was discovered.

DISCUSSION

Dr. Chaillé Jamison (New Orleans): In opening this discussion, I wish to say that I have had to revise entirely my ideas of the frequency of ulcer in the negro. It was my impression through many years of observation that the negro rarely had duodenal ulcer, that when he had ulcer it was much more likely to be of the stomach, and usually that it was a mistaken diagnosis of ulcer and far more likely to be malignant or syphilitic. These observations of Dr. Campagna have disillusioned me. It is not entirely our fault that we held such views. For years, we transferred these patients to a surgical service and if an ulcer was really demonstrated, these individuals were sent back to us. I have always felt that this class of people, if they could be relieved surgically, were fit subjects for surgery and not medical treatment because their economic and social status was such that they could not follow the prolonged régime necessary to cure the ulcer by medical means.

Dr. Michael E. DeBakey (New Orleans): Dr. Campagna deserves commendation for correcting a false impression and demonstrating that peptic ulcer occurs almost as frequently in the negro as in the white race.

We, as surgeons, are interested particularly in the complications of peptic ulcer. Of these, perforation is one of the most important. Dr. Odom and I have recently made a survey of 211 cases of patients with perforated ulcers admitted to Charity Hospital during the ten year period, 1929 to 1938 inclusive. Of this number there was 128 (60.6 per cent) white and 83 (39.3 per cent) colored. This would seem to indicate a greater incidence in the white race. However it must be realized that the incidence of total admissions of white patients is greater than that of the colored. Accordingly, if the respective incidences are based upon corresponding per hundred thousand admissions these figures are found to be .0403 per cent for the white and .0364 per cent for the colored. Thus, actually perforated ulcer occurs with almost equal frequency in the two races.

Dr. Maurice Campagna (In conclusion): I want to point out an interesting fact from the statistical standpoint: Every third day a negro patient suffering with a peptic ulcer is admitted into Charity Hospital.

THE DIFFERENTIAL DIAGNOSIS OF ESSENTIAL (PRIMARY ARTERIOLAR) AND SECONDARY HYPERTENSION

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Brown[1] has estimated that 98 per cent of all persons with an elevation of blood pressure belong to a group classified by the term essential hypertension. This classification, admittedly a poor one, masks our ignorance of the true nature of the disease. Probably essential hypertension includes a number of varied pathologic conditions whose true significance has been unrecognized. Many physicians will remember that not so distant day when obscure fevers were considered, typhoid, typhoid-malaria, typhoid-pneumonia and similar vague diagnostic terms. As the knowledge of medicine progressed this obscure fever complex was broken into many distinct clinical entities. Malta fever, tularemia, Rocky Mountain spotted fever, typhus fever, blood dyscrasias, Hodgkin's disease and miliary tuberculosis are but a few notable examples.

In about two per cent of all patients with

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an elevation of the blood pressure some definite etiologic factor may be found that is responsible for the condition. It is with these cases that this paper is primarily concerned. This article is written to emphasize the fact that all persons with an elevation of the blood pressure are not examples of so-called essential hypertension. It is to be hoped that the symptom complex that we now call essential hypertension will be further subdivided as people with an elevated blood pressure are studied in more detail.

Secondary hypertension in the present state of our knowledge may be classified as:

(1) Hypertension dependent on disease of the kidney.
   (a) Pyelonephritis.
   (b) Congenital cystic kidney.
   (c) Glomerulonephritis.

(2) Hypertension dependent on disorders of the endocrine glands.
   (a) Hyperthyroidism.
   (b) Tumors of the adrenal glands.
      (1) Those that arise from the cortex.
      (2) Those that arise from the medulla.
   (c) Pituitary basophilism.

(3) Diseases of the vascular system.
   (a) Coarctation of the arch of the aorta.
   (b) Arteriovenous fistula.
   (c) Aortic regurgitation.
   (d) Periarteritis nodosa.

HYPERTENSION DEPENDENT ON DISEASE OF THE KIDNEY

That the kidney was in some way concerned with the production of hypertension was suspected many years ago by Richard Bright.[2] In 1836 he demonstrated that renal disease was frequently accompanied by an hypertrophied heart without other evident cardiac defects. This pathologic change was believed to be due to the liberation of some pressor substance by the diseased kidney. This pressor material acted in one of two ways: (1) Direct stimulation of the heart to greater activity which in turn eventually led to hypertrophy; (2) stimulation of the arterioles and capillaries thereby increasing the peripheral resistance and rendering greater force necessary to force the blood through them. Thus Bright reasoned that the primary disease was in the kidney; that this gave rise to an altered quality of the blood which in turn caused hypertrophy of the heart.

Gull[3] in 1872 advanced the idea that hypertension was due to a widespread vascular pathology of which the vascular lesions in the kidney were only a part. This viewpoint has been generally accepted by most students of the problem of essential hypertension. However a few investigators, notably Volhard and Fahr,[4] still regard the disease as due to renal dysfunction. Recent experimental work tends to support such an hypothesis. Goldblatt and his co-workers[5] have shown that hypertension may be produced in dogs by partially compressing the renal artery by means of a metal clamp. Houssay and Fasciolo[6] repeated Goldblatt's experiment and then transplanted the ischemic kidney to another dog, anastomosing the artery and vein to the corresponding vessels in the neck of the second dog. Hypertension developed in the second animal. Prinzmetal et al[7] made saline extracts from the kidneys of 21 patients who had hypertension and 24 subjects with a normal blood pressure. These extracts were injected intravenously into dogs and their effect on the blood pressure noted. The mean pressor effect of the saline extracts from the hypertensive group was greater than that of the normal group. Extracts made from other organs had no pressor action. These observations are compatible with the theory that hypertension in man is due to the elaboration of an increased amount of a pressor substance by an ischemic kidney. It is not known whether the pathogenesis of human hypertension is the same as in experimental hypertension due to renal ischemia. The high incidence of arteriolar lesions in the kidney,[8] the persistence of vascular hypertonus following the removal of vasconstrictor tone,[5] the occasional cure of hypertension following the removal of a pathologic kidney[9] suggest

that hypertension in human beings may result from a similar mechanism.

PYELONEPHRITIS

Longcope[10] recently discussed the relation between chronic bilateral pyelonephritis and hypertension. Hypertension was found in 50 per cent of the 22 cases of pyelonephritis that were studied. Butler[11] reported a series of six children who had pyelonephritis and an associated hypertension. In two of these cases the pyelonephritis was unilateral. Nephrectomy was performed and the blood pressure returned to normal. Barker and Walters[9] describe a patient in whom hypertension followed chronic pyelonephritis. At operation an atrophic kidney was removed. A blood pressure of 232/135 was recorded at the time of the first examination. Two months after the operation the blood pressure was 130/90. The authors expressed the opinion that judgments as regards the value of this procedure should be reserved until more time has elapsed. The exact relation of chronic pyelonephritis to hypertension is still debatable. In many cases of pyelonephritis the blood pressures are normal. However, the degree of injury to the renal parenchyma in these cases varies tremendously. Weiss[12] has demonstrated vascular lesions in the kidney that he believes were the results of pyelonephritis. The severity of the vascular lesions paralleled the severity of the pyelonephritis and resembled the vascular lesion seen in essential hypertension. It is possible that a hypothetical pressor substance such as is produced by Goldblatt's technic might also be produced by some other type of renal injury that tends to produce renal ischemia. Since Goldblatt's original experiments, cases of hypertension in which the renal artery was partially occluded by a number of pathologic processes, have been described. Whether or not these processes produce a Goldblatt kidney is a question that is as yet undecided.

The differential diagnosis between chronic pyelonephritis with hypertension and essential hypertension is usually an easy one. A history of repeated attacks of pyelonephritis accompanied by a gradually increasing blood pressure is the rule. Examination of the urine may disclose the presence of organisms, pus cells, and a low specific gravity, the degree of which depends upon the amount of renal damage.

CONGENITAL CYSTIC KIDNEY

The majority of adults with polycystic kidney disease come to the physician because of symptoms of renal insufficiency. Aside from the palpable kidneys which in practically all clinical cases are bilateral, the clinical picture is similar to that of a chronic glomerulonephritis. The condition is thought to be a congenital one and if the affected individual escapes death at birth or in early childhood symptoms of the disease do not become manifest until about the age of 40 years. The systolic blood pressure is over 150 in over half of the patients with a renal insufficiency. A moderate cardiac hypertrophy is found in some cases.

GLOMERULONEPHRITIS

The blood pressure in acute and subacute glomerulonephritis is usually moderately elevated, the systolic blood pressure being increased as a rule 20 to 40 mm. In mild cases no elevation occurs or persists for only a few days. The persistence of hypertension after the other symptoms are subsiding indicates the development of chronic nephritis. The characteristic clinical findings are an abnormal urine (albuminuria, casts, hematuria, oliguria), hypertension and occasionally renal insufficiency. These findings are rarely to be confused with the usual case of essential hypertension.

In chronic glomerulonephritis difficulty may be experienced determining which of the two conditions, hypertension or glomerulonephritis, is primary. The differentiation may be readily made if the patient has been under observation for a number of years, but may be very difficult if the patient is first seen after uremia develops. In chronic glomerulonephritis there will be a history of an acute attack of nephritis with exacerbations; the blood pressure gradually rising as renal insufficiency develops. Anemia develops early in the disease. In pri-

mary hypertension the elevation of the blood pressure appears early in the disease and renal insufficiency is a late manifestation. Secondary anemia is rarely a problem unless complicated by renal insufficiency. Further points of differentiation are the degree of cardiac hypertrophy, the degree of hypertension and the character of the urine. Any marked degree of cardiac hypertrophy is usually absent in nephritis and is the usual finding in severe cases of essential hypertension. The degree of elevation of blood pressure is important. In nephritis the range of the systolic blood pressure is usually from 160 to 200 while in essential hypertension systolic blood pressures above 200 are not an infrequent finding. Examination of the urine cannot always be depended upon to differentiate the two conditions. Red blood cells, large amounts of albumin and casts may appear in the urine of patients with essential hypertension secondary to heart failure. It may be necessary to wait until the chronic passive congestion is relieved before the two diseases can be accurately separated. In the usual case of essential hypertension large amounts of red blood cells and casts other than hyaline and granular ones are unusual. Fortunately in essential hypertension uremia is a cause of death in only 8.6 per cent of cases so that this condition will be an infrequent cause of confusion.

Although the average severe case of chronic glomerulonephritis terminates in uremia, Mosenthal and Lander[13] have pointed out that many such persons die with a vascular complication such as cerebral hemorrhage or thrombosis and coronary occlusion. Forty-five per cent of their patients with chronic glomerulonephritis who had little or no renal insufficiency had a marked or moderate elevation in blood pressure.

HYPERTHYROIDISM

The systolic blood pressure in hyperthyroidism is usually moderately elevated, the usual range being from 140 to 160. The diastolic blood pressure is apt to be lower than normal with a resultant high pulse pressure. A high pulse pressure in the absence of aortic regurgitation is said to be highly suggestive of hyperthyroidism. Marked elevation of the blood pressure is most unusual in hyperthyroidism. The characteristic signs and symptoms of hyperthyroidism usually enable a differentiation to be made between this condition and essential hypertension. It should be pointed out, however, that the differentiation between the two conditions may at times be quite difficult. Many persons with essential hypertension are emotionally unstable, nervous, irritable, excitable and complain of palpitation, rapid heart action, vasomotor disturbances and many other symptoms highly suggestive of the hyperthyroid state. In addition, the basal metabolic rate in many of these cases of essential hypertension is elevated, the average being about +15 per cent. In severe cases the elevation in the basal metabolic rate may be as high as +25 per cent. In such cases the characteristic signs and symptoms of hyperthyroidism are usually lacking; these are a history of weight loss in spite of increased intake of food, heat intolerance, which is usually an outstanding symptom, and difficulty in climbing stairs due to a weakness of the quadriceps muscles. A persistently elevated pulse rate above 100 per minute in the absence of fever is highly suggestive of hyperthyroidism. The characteristic nervous alert appearance of these persons with their numerous purposeless movements are unforgetable once they are seen. The skin looks and feels warm and moist. A mistaken diagnosis of hyperthyroidism in cases of essential hypertension will rarely be made if these points are kept in mind.

TUMORS OF THE ADRENAL GLANDS

Tumors of the adrenal glands capable of producing hypertension are two in number, one that originates in the adrenal cortex producing the so-called adrenal cortical syndrome and paragangliomas that arise from the medulla producing a paroxysmal type of hypertension. It is important that both of these tumors be correctly diagnosed because surgical removal results in a prompt regression of symptoms. Early recognition is im-

portant in the adrenal cortical tumors because the majority of the tumors are malignant. However, in the early stages of the disease the tumor is definitely encapsulated and may be removed without danger of the growth recurring.

TUMORS THAT ARISE FROM THE ADRENAL CORTEX

A hyperfunctioning tumor of the adrenal cortex produces signs and symptoms that are dependent upon the sex of the individual. Adrenal tumors in man are extremely rare, only five cases being reported in the literature. In the adult male the growth results in a loss of masculinity and an appearance of femininity. The breasts enlarge and the habitus takes on feminine contours, the testes and penis decrease in size and cease to function as organs of reproduction.

When the disease occurs among women the secondary sex characteristics become masculine in character. Thus the menses cease, the breasts decrease in size, a beard appears, the hair of the extremities, abdomen and back increases in amount, its distribution becomes masculine in type, and the clitoris undergoes hypertrophy.

In addition to changes in the secondary sexual characteristics there are important associated signs that are common to both sexes. Among these are a florid complexion, purplish striations of the skin, acne, hypertension, diabetes, osteoporosis, weakness and a "buffalo" type of obesity.

Adrenal cortical tumors must in turn be differentiated from pituitary basophilism, arrhenoblastoma of the ovary, tumors of the thymus and physiologic variants with an essential hypertension. Ovarian and thymic tumors practically never produce diabetes, hypertension and osteoporosis. Finally in addition there are many apparently normal women, the so-called physiologic variants who have varying degrees of hirsutism, obesity, amenorrhea and hypertension for which no adequate basis can be found. Pituitary basophilism is differentiated from adrenal cortical tumors only with extreme difficulty. The course of the two diseases is said to be quite different; in the case of pituitary basophilism being slowly progressive and fairly constant, while in adrenal tumors it is variable and rapid. In the average case the two conditions cannot be differentiated from one another. Consequently every case of pituitary basophilism should be examined with a suspicion that the disease may originate in the adrenal gland. For more detailed information the reader should consult articles on the subject by Walters, and Kepler,[14] Walters, Wilder and Kepler[15] and Kepler[16].

TUMORS THAT ARISE FROM THE ADRENAL MEDULLA

Paragangliomas of the adrenal gland produce a paroxysmal type of hypertension accompanied by vasomotor phenomena such as pallor, tachycardia, headaches and apprehension. The blood pressure in the interval between the paroxysms is usually within normal limits. The paroxysms are produced by undue physical and mental exertion and may be precipitated experimentally by the "cold test" (immersion of the hand in water at a temperature of 4° C. for one minute). During a paroxysm the rise in systolic blood pressure is great, usually being well above 200, often going as high as 260 to 280. These tumors are benign, and surgical removal results in a permanent cure of the hypertension. These tumors are quite rare, only four such tumors being recorded in the files of The Mayo Clinic. C. H. Mayo,[17] the Porters[18] and Shipley[19] have reported cases with this condition.

PITUITARY BASOPHILISM

Pituitary basophilism, or more properly Cushing's syndrome, was formerly attributed to a basophilic adenoma of the hypophysis. However, later reports indicate that some of the adenomas are chromophobic and over 50 per cent of the cases show no hypophyseal tumor of any kind. The disease produces a syndrome identical with that seen in tumors of the adrenal cortex. Surgery offers the only certain method to differentiate the two diseases. When surgery is undertaken both adrenal glands should be explored. Because the tumor is most often found on the left side, this gland should be the first to be operated on. Intra-

venous pyelography may indicate the side of the lesion in some cases.

COARCTATION OF THE ARCH OF THE AORTA

The term coarctation of the arch of the aorta implies a partial or complete occlusion of the lumen of the aorta. When it affects an adult the occlusion occurs at or near the insertion of the ductus arteriosus, which is usually just distal to the origin of the left subclavian artery. The condition is not as rare as is generally suspected, occurring about once in every 1,500 autopsies.

The diagnosis is not a difficult one if the possibility of the condition is kept in mind. According to Baker and Shelden[20] the cardinal signs of the condition may be summarized as follows:

(1) A forceful bounding pulse is noted in the vessels of the neck and upper extremities, and an absence or marked diminution of pulsation in the vessels of the lower extremities. If a feeble pulse is detected over the femoral arteries it is asynchronous with the radial pulse.

(2) A palpable aortic pulsation is absent in the abdomen, whereas a forceful systolic thrust is present in the suprasternal notch.

(3) There is a hypertension in the brachial arteries, usually with a definite pulse pressure and a much lower blood pressure in the popliteal arteries. This is a reversal of the normal state.

(4) Evidence of a well developed collateral circulation is found. Large tortuous anastomosing arteries may be seen and palpated in the interscapular, suprascapular and axillary regions, and less often are conspicuous over the anterior aspect of the thorax. The internal mammary and the deep epigastric arteries are occasionally visible and palpable. These collateral vessels transmit a systolic murmur and occasionally a fine accompanying thrill.

(5) A murmur is usually heard over the aortic area and has its maximum intensity along the left border of the sternum. This murmur is frequently altered by congenital or acquired valvular lesions. Cardiac enlargement is present in about three-fourths of the cases.

(6) Roentgenologic signs are: (1) A bilateral erosion of the inferior borders of the ribs; (2) an absence of the prominent aortic knob usually associated with a hypertension; (3) a dimpling of the descending aorta which is seen best in the left oblique position.

(7) The presence of other congenital anomalies, cardiovascular and otherwise. A history suggestive of leakage from a congenital cerebral aneurysm should suggest coarctation of the arch of the aorta because of the frequent association of the two conditions. Stickney and Dry[21] have written an interesting article on the subject.

ARTERIOVENOUS FISTULA

This term applies to an abnormal communication between an artery and a vein. These may occur anywhere in the body and may be congenital or acquired through trauma. Symptoms that result from the lesion depend upon the degree of communication between the artery and vein. In the usual case of arteriovenous fistula the blood pressure is normal, however, in an occasional case it is slightly elevated. These latter cases should be differentiated from early and mild essential hypertension. The outstanding diagnostic points of an arteriovenous fistula are as follows: (1) Over the site of the fistula there is a continuous bruit and a purring thrill throughout the cardiac cycle with systolic intensification. This thrill and murmur may be made to disappear when the fistula is closed by digital pressure. In some cases, especially those of congenital origin, the thrill and murmur are absent. In such cases the condition may be suspected because of an increased girth and length of the affected extremity, increased warmth of the skin in the region of the fistula, a higher than normal oxygen content of the venous blood taken below the site of the aneurysmal communication and finally by the presence of gangrene and varicose ulcers in the distal part of the limb. Any young individual with varicose veins should be suspected of having an arteriovenous fistula. Many unsuccessful operations have been performed on such patients. (2) The systolic blood pressure is usually

normal or slightly above normal, while the diastolic pressure is considerably below normal. Pressure over the fistula produces a rise in the systolic and diastolic blood pressure, the latter being the most marked. (3) Closure of the fistula by digital pressure results in an immediate drop in pulse rate. Reviews on the subject may be found in papers by Pemberton[22], Pemberton and Saint[23], Horton and Ghormley[24].

AORTIC REGURGITATION

The blood pressure findings in aortic regurgitation are rather characteristic, the systolic pressure being increased and the diastolic lowered. The normal range between the systolic and diastolic pressures (pulse pressure) ranges from 30 to 40. In aortic regurgitation this may be doubled or trebled. A high pulse pressure also occurs in hyperthyroidism and some cases of arteriovenous aneurysm. The other signs of aortic regurgitation make the differential diagnosis between these conditions and in addition essential hypertension not difficult in the average case. In some cases of aortic regurgitation the diastolic murmur may be so faint that it may be missed entirely. It is usually heard best in the third or fourth interspace to the left of the sternum while the patient is sitting upright and leaning forward.

PERIARTERITIS NODOSA

Periarteritis nodosa is an extremely rare disease that is usually undiagnosed until a postmortem examination is made. A combination of the following signs and symptoms should at least suggest the presence of the condition: a peripheral neuritis multiple in its distribution, a renal lesion simulating a nephritis, hypertension, indefinite cerebral manifestations resembling an encephalitis, changes in the eyegrounds in the form of exudates, hemorrhages and blurring of the disc margins. These symptoms are due to a widespread necrotizing and obliterating vascular lesion that affects any part of the body. This fact explains its protean manifestations. Curtis and Coffey have stated that it is surprising that the number of instances of hypertension are not greater in a disease that produces so great a vascular resistance. The clinical diagnosis of periarteritis nodosa should be verified by means of biopsy. The specimen is best taken from a lesion in the skin or a tender spot in an affected muscle. Kernohan and Woltman[25] have written an interesting article on the subject.

SUMMARY AND CONCLUSIONS

There are at least eleven conditions that are capable of producing an elevation of blood pressure. In some instances these may be confused with so-called essential or primary hypertension. It is important that primary and secondary hypertension be differentiated from one another, because in some instances of secondary hypertension as that due to hyperthyroidism, tumors of the adrenal gland and arteriovenous fistula, successful surgical removal affords complete relief. Although secondary hypertension accounts for only a small proportion (two per cent) of the total cases of hypertension, it is logical to assume that this figure will grow progressively larger as the disease complex essential hypertension is further broken down into separate and distinct clinical entities.

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CONCEPTS OF THE TREATMENT OF HYPERTENSION

I. L. ROBBINS, M. D.†

NEW ORLEANS

The treatment of hypertension continues to be of paramount importance. That this perplexing problem is one to justify a feeling of futility, is borne out by the experience of all clinicians. Yet, in recent years, two important developments, one in experimental pathology and the other in surgery, heralding a new epoch in hypertensive therapy, bid fair to have far reaching and important consequences in the treatment of this disorder.

In order to employ rational therapy in hypertension, it is imperative at the outset that there should be a correct determination of the clinical stage of this condition. Hypertension may be the outcome of varied causes. This discussion will deal with essential hypertension. Not alone the clinical syndrome, but the cause, the course and the consummation of hypertension must be briefly alluded to if a proper evaluation of therapy, its rationale, its possibilities, its shortcomings and its disadvantages are to be obtained.

ESSENTIAL HYPERTENSION

Essential hypertension is a syndrome in which the normal blood pressures of 150-160 systolic and 90 mm. of mercury diastolic are exceeded. Of insidious onset and variable course, it is for a long time asymptomatic and its presence only accidentally discovered. Early symptoms are few, vague and mild. Periods of remission occur in which progress is exceedingly slow to stationary, but the advance of the disease is inevitable. Exacerbations follow and during these periods, symptoms few to many, and mild to severe, are present. Early, the blood pressure is moderately elevated and labile. Normal fluctuations occur under basal conditions, but as the disorder continues, the pressure tends to higher elevations, fewer fluctuations and more fixation. The heart, brain, kidneys, retina and vascular apparatus reveal no impairment of adequacy in the early stages but later, dysfunction and finally failure of one or more of these vital organs results. The symptomatology grows progressively more constant and distressing and eventually invalidism and death are the outcome. Meakins[1] states the cause of death is the heart in 65 per cent, the brain in 25 per cent, and the kidney in 10 per cent.

CLASSIFICATION OF HYPERTENSION

Patterned after Keith and his co-workers,[2] Morlock,[3] and Davis and Barker,[4] is a classification of hypertension into four groups, based on the stage of the disease.

Group 1—Normal hyperreactors and ex-

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tremely early cases. The prognosis is excellent.

Group 2—Early to moderately advanced cases. The prognosis is good. Groups 1 and 2 have no anemia.

Group 3—Moderately advanced to advanced cases. Anemia occurs in 50 per cent of these. The prognosis is serious.

Group 4—Advanced cases. Anemia occurs in 65 per cent of these. This group includes the malignant hypertensives. The prognosis is bad.

Of the mild cases, all ages, comprising Groups 1 and 2, 90 to 100 per cent have no symptoms or are readily relieved. Seventy-five per cent of the moderate cases, all ages, have no symptoms or can be relieved. Of the severe cases over 45 years of age, 30 per cent may obtain a substantial fall in blood pressure; 40 per cent symptomatic relief, and 30 per cent with marked and irreversible changes, no possible amelioration of symptoms. While this grouping clarifies the problem it must be understood that concomitant arteriosclerosis of the aorta and large vessels will alter the course and profoundly influence the effect of treatment. But there are additional factors necessary for a proper appreciation of the worth of therapy. It is important to review the modern concept of the cause of hypertension, the nature of the agent responsible for the rise in mean arterial pressure, and the underlying basis for hypertension in man.

PATHOGENESIS

Virtually all authorities[21,22] are agreed that the rise in arterial pressure is due to a more or less generalized vasoconstriction of the small arteries and arterioles. This vasospasm is due to an overaction of the vasomotor nerves and a chemical factor; later in the disease, an added local degenerative fault. The origin of the vascular hypertonus is chemical. The vasomotor action affects the level of the blood pressure to a marked degree but its lack does not eliminate the hypertonia of hypertension. It has, however, a direct and decisive bearing upon treatment. The only benefit to be procured from treatment follows the release of vasomotor tone which in turn causes a diminution in vasoconstrictor tone and so produces a fall in blood pressure, but does not affect the spasm responsible for the hypertension. Goldblatt,[5] by the constriction of the main renal vessels in dogs, has been able to simulate both the benign and the malignant phase of essential hypertension in man. This renal ischemic hypertension is chemical in origin. It is important that no operation upon the sympathetic nervous system has been able to reduce this hypertension to normal.

Scott[6] believes that the cause of essential hypertension, in the light of Goldblatt's researches, is arterial and arteriolar sclerosis of the renal vessels. This results in ischemia which, by a humoral mechanism, produces vasoconstriction in the peripheral arterioles and thus an elevation in systemic blood pressure. The clinical course of hypertension is conditioned by the progress of the sclerotic vascular changes in the kidneys. A slow development favors hypertension but is not rapid enough to impair renal excretory function; hence, most patients die of heart failure or cerebral accidents before uremia develops. If the vascular change is rapid, the clinical picture is that of malignant hypertension. The kidney function is greatly impaired and uremia occurs. Goldblatt and others have demonstrated that the removal of the ischemic kidney results in a return of the blood pressure to a normal level. Therapy must be based on etiology and an understanding of the pathogenesis of the disease. On any other basis, treatment is illogical and inconsequential.

MEDICAL TREATMENT

Meakins feels that "treatment is a source of much discouragement" and Stewart[7] asserts that "there is little new to add." Stieglitz[8] offers the opinion that "the innumerable methods of therapy are proof that none are wholly good." Though the physician cannot cure, he can often relieve and always give comfort and this constitutes good medical practice. Treatment of hypertension may be considered under five major divisions:

1. Prophylaxis.

2. Medical treatment of hypertension, *per se*.
   a. In general.
   b. In crises (paroxysmal high rises in blood pressure).
3. Treatment of the cause of hypertension.
4. Treatment of the effects of hypertension.
5. Surgical treatment of hypertension.

The criteria for the diagnosis of hypertension are difficult to ascertain. The variability of the blood pressure under conditions of rest, activity, emotional stress, physical fatigue, seasonal and postural changes, coupled with the insidiousness of the onset and the long asymptomatic course, makes it extremely difficult to place the proper value on any therapy employed in hypertension.

Prophylaxis concerns itself with the removal of physical disabilities and faulty habits of living. All methods removing the stresses and strains of environmental tensions will accrue to the patient's benefit. Eradication of foci of infection and prevention of infectious and contagious diseases of childhood must protect the kidney and so decrease the potential threat to the renal vascular apparatus later in life and defer the tendency for hypertension to become clinically manifest.

Diet. The diet should be wholesome and well balanced and calorically adequate. Salt and proteins are not contraindicated. Liberal use of fluids and foods rich in iron for anemia are desirable.

General Measures. Proper rest, regular bowel function, reasonable exercise, moderate climates are all conducive to the maintenance of arteriolar relaxation. Moderation in all things is the objective to be attained. Patients accustomed to the use of alcohol and tobacco may continue to use them in small amounts. Untoward effects call for their discontinuance.

Physiotherapy. Hydrotherapy, massage and diathermy have some relaxing value. Lasting and effective reduction of blood pressure and relief of symptoms have been reported by the use of x-ray irradiation of the pituitary and adrenal glands.

Drugs. The opinion of clinicians concerning drugs is not encouraging. Stewart states, "I am of the opinion that none of the drugs directed towards lowering blood pressure are of benefit." This is the studied conclusion of most physicians. The important drugs comprise two classes: (1) Vasodilators and (2) sedatives.

The ideal vasodilator remains a pious wish awaiting fulfillment. It should be one that is simple, non-toxic, possessing a steady, moderate, relaxing power and capable of use over an extended period of time. The nitrites are of little value in general management. However in the paroxysms of high blood pressure (the crises) they have a definite place. The prompt and sharp reduction is often sufficient to prevent serious vascular accidents. Stieglitz advocates bismuth subnitrate as a mild but enduring vasodilator. He obtained satisfaction in 77 per cent of his cases. Others have failed to confirm this finding. The iodides are still considered to be of some value. Friedman et al[9] obtained a decided fall in blood pressure in 18 of 52 women.

Recently there has been a resurge of popularity in thiocyanate therapy. The thiocyanates, sodium and potassium, are vasodilators. The dose varies greatly, ranging from 0.1 to 0.45 gram daily, with a maintenance dose of 1.0 gram a day to 0.3 gram a week. Barker[10] states the drug is safe, if the blood cyanate level is maintained at 8 to 14 mgm. per 100 c. c. of blood. It is at this concentration that the drug's hypotensive effect is optimal. The toxic effect is accumulative. The mild toxic symptoms are weakness and fatigue, cramping pains and mild gastrointestinal complaints. Barker insists that "without blood cyanate determinations, the drug should not be used. It has dangerous possibilities." The margin of safety between the therapeutic and toxic dose is so close or overlapping that Bastedo[11] feels that the drug should be considered *sub judice*. Massie, Ethridge and O'Hare,[12] under carefully controlled conditions, treated 14 patients with uncomplicated vascular hypertension. The average fall in blood pressure with sodium thiocyanate was 66 to 21 systolic

and 33 to 8 diastolic, with appreciable disappearance of symptoms. After discontinuance of the drug the previous blood pressure and symptomatology returned.

The sedatives are probably the most valuable drugs in the production of arteriolar relaxation. The bromides and barbiturates are efficient in the relief of restlessness and anxiety in patients with excessive emotional reactions. Barbiturates, according to Stieglitz, decreased arterial tension in about 80 per cent of the patients treated.

Psychologic therapy. This is considered to be of the greatest importance in the hypertensive regimen. Physicians of experience affirm that the proper pursuit of this invaluable therapeutic approach is conducive of good and prolonged vasodilator effects. The doctor must be tactful and kindly. He must gain the confidence and instill assurance and equanimity in his patients. Menninger[13] feels that "in the search for definiteness in biological signs, it is difficult to remember that precision in measurement is not equivalent to accuracy in interpretation. I have often wondered," he continues, "if the introduction of the sphygmomanometer has not killed more patients than it has saved. Numbers have become more important than meaning." Psychology, in Menninger's experience, has been effective in some cases of chronic hypertension. Ayman,[14] after a careful analysis of 35 research projects in the treatment of hypertension, noted the uniformly successful results despite the diversity of procedures. Failure was almost nil. Convinced of a common factor unrecognized by the investigators he studied the effect of a placebo (dilute hydrochloric acid). Using minimal criteria for a diagnosis of hypertension, 40 patients were treated and followed; 82 per cent showed definite improvement as evidenced by blood pressure fall and symptomatic relief.

The belief that it is dangerous to reduce high blood pressure because it is a compensatory mechanism designed to maintain kidney, heart and brain function is erroneous. Renal efficiency is not dependent upon hypertension. It is the relief of renal vascular constriction that improves function.[15] It is of interest to note in recent articles by Jacobson[16] a description of what he terms "progressive relaxation." Its objective is the training of the individual to relax and eliminate tension. To quote Jacobson, "the findings furnish foundation for the view that high blood pressure in hypertension can result in part from habitual activity involving hypertensive states in the skeletal musculature." The method appears to possess qualities that may be valuable.

Treatment of the cause of hypertension. Concerning this, it must be obvious to all that the knowledge of the nature of the mechanism, at the present time, makes this impossible.

Treatment of the effects of hypertension. The discussion will not deal with this phase of the subject. Suffice it to say, that the same established methods as are used in the treatment of congestive heart failure, cerebral and coronary vascular accidents and uremia, due to other causes, are employed.

SURGICAL TREATMENT

In recent years surgery has assumed a most significant place in the treatment of essential hypertension. The failure of medical measures and the rapid progress of the disease in some individuals is a sufficient and justifiable reason for surgery. Though still in an experimental stage its encouraging results and low mortality make its continuance most desirable. To establish its real worth a careful selection of cases and prolonged postoperative observations are necessary to achieve the proper perspective. Craig[17] observes that "operation seems most efficacious in the definite vasospastic type of hypertension. As an average rule the patient must be under 50 years of age and the hypertension as of groups 2 or 3." Smithwick[18] in a review of this subject found that good results were obtained only in 40 or 50 per cent of favorable cases and in only 5 to 10 per cent of the advanced cases, but in some of these symptomatic relief was marked. White[19] notes that "it has not yet been established that the expected duration of life in hypertensive patients can

be prolonged, even if the blood pressure is reduced." Goldblatt's[20] experiences convince him that hypertension in man "is produced by the constriction or the thickening of the wall of the arterioles of the kidney." It is conceivable, at least that some of these vessels are merely in spasm and still under the influence of the nervous system and that they are therefore in a reversible state and can become dilated as a result of removal of the vasoconstrictor effect. The improvement that occurs from the operation, in all probability is, apart from the effect of the enforced rest, due to the improvement of the circulation through the kidneys and not to any effect on the rest of the vasomotor apparatus of the abdomen. Another important development in the surgery of hypertension that may have great potentialities, is an outgrowth of the renal ischemic hypertension of Goldblatt. Recalling that the ischemic kidney in animals results in a fall of the high blood pressure to normal, several cases have been reported of the extirpation of a diseased kidney in patients with pyelonephritis and arteriosclerosis with hypertension and in whom the blood pressure made a prompt return to normal.

SUMMARY

The proper therapy in hypertension must be based upon the pathogenesis and the clinical course of this syndrome. Only then can the physician have a correct understanding of the true value of the therapeusis he employs. There is no specific nor curative agent but much can be done to relieve the patient, even in the last stages of the disorder. The experience of physicians concerning treatment is not encouraging but the recent developments in pathology and surgery hold forth the possibility of new and far reaching accomplishments in the ultimate conquest of this serious malady.

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DISCUSSION

Dr. Edgar Hull (New Orleans): I am inclined to agree with the statement which Dr. Robbins quoted from Menninger that it was probably an evil day when Riva-Rocci first devised the sphygmomanometer. Certainly, I believe it has caused more suffering and more mental anguish to patients than it has alleviated suffering and anguish, because up to the present time there is no adequate treatment of hypertension, and most patients would be better off if they did not know they had it. We can only treat symptoms; we cannot treat causes, because we do not know them as yet. I am inclined to believe that in the treatment of hypertension, the patients who have not yet developed symptoms and signs of cardiac or renal disease are best handled as psychoneurotics, as patients with an anxiety state are handled by psychotherapy and careful use of sedatives. I think it is important in treating patients with hypertension to be sure that they do have essential hypertension, especially that they do not have a hypertension that is relievable, such as hypertension due to adrenal tumor or urinary obstruction. It is less important to differentiate between essential hypertension that is

due to chronic glomerular nephritis, for neither of these is remediable.

As regards surgical measures used in the treatment of hypertension, I think we should wait and not recommend these for our patients until definite information is ascertained as to the ultimate value of these procedures. Certainly we should not recommend surgical measures in treatment except in institutions where close observation can be maintained and where surgeons of the highest skill can do the work.

Dr. Robbins spoke of Goldblatt's work on the pathogenesis of hypertension. Goldblatt has produced hypertension in dogs by producing renal ischemia, and has advanced the suggestion that essential hypertension may primarily be due to vascular disease in the kidneys, thus reviving an old concept which, in recent years, has had few adherents. It has long been known, of course, that hypertension occurs in various types of renal disease, and hypertension has been produced experimentally by various methods of producing damage to the kidneys—by ligating the ureters, inducing necrosis by chemical means, and by ligation of the renal vein. Goldblatt's work is valuable in that it furnishes a convenient means of experimentally inducing hypertension so that its effects may be studied, but I do not think it has added to our knowledge regarding the genesis of essential hypertension in man. Available evidence so far indicates that the arteriolar lesions in the kidneys in cases of essential hypertension are the effect rather than the cause of the high blood pressure, and that the cause of the hypertension lies in chemical, hormonal, or nervous factors and does not depend upon discernible anatomic lesions in the kidneys or other organs.

I would like to make one additional remark. Dr. Robbins spoke of measures to be used in crises where the blood pressure may become dangerously high, and I would like to mention one procedure which has been used to reduce the blood pressure when it has reached alarming heights. This is a procedure which temporarily accomplishes the same result as sympathectomy, that is, extradural injection of procaine, the induction of extradural anesthesia. Although I have had no personal experience with this method of treatment, indications are that in a good many cases it produces a prompt, definite fall in the blood pressure which may be maintained for several weeks or even several months, and this measure may be of value in the treatment of hypertensive crises or hypertension which has reached an alarming level.

Dr. Chaillé Jamison (New Orleans): I would like to touch on just two points that have been mentioned and recount to you some personal experiences. I mean by that patients who have been under my personal observation for some time.

The first touches—and considerable interest has been aroused in it—the matter of treatment of the suprarenals and pituitary by the ray and other forms of radiotherapy. I have had a patient under observation for years who has had this performance most thoroughly instituted without any effect upon his blood pressure, and I could mention several other such cases. I have had in the last two years two patients with labile hypertension who passed all the criteria for surgical interference, both of them apparently young men about forty. One of these men had the older form of sympathetic resection done, plus a removal of the suprarenal. He was observed by the surgeon who performed this operation, in conjunction with myself, for six weeks following the second operation, which as you know, is done in two stages. The surgeon said he was doing splendidly, but every time I took his blood pressure it was at least 260 systolic. I got a call from him six weeks later and he was dead at the time I reached him. The second patient was a typical hypertensive. He had an extensive sympathetic section done in two stages on both sides and returned from a famous clinic, where he had the operation performed, to New Orleans with his blood pressure 10 millimeters higher, both systolic and diastolic, than before operation. He and I were dreadfully disappointed because I had offered this as a last resort—he wanted to get married. Anyhow this man was in absolute despair. I had tried everything on him. Finally, I put him on the usual treatment with thiocyanate. This is interrupted treatment or the patient gets poisoned. After you get lower pressure that continues from ten days to two weeks, you go off for a period of three weeks. The point is that though I could not manage this man by medical means, his response to treatment following sympathectomy has been perfectly magnificent. His pressure is now within almost normal limits for his age and he is going to get married next month. I doubt seriously whether surgery in itself brings any real cure. It is based on Volhard's observation.

One final point is this: I have observed and have at least three times had the experience with my cases of essential hypertension, in the terribly hot weather we have in New Orleans in August, sometimes that if these individuals go into a building which is quite cold from the air-conditioning, there will likely be a disastrous effect, one man had a cerebral accident.

Dr. A. A. Herold (Shreveport): I would like to ask Dr. Robbins, in closing, to tell us what distinction he makes between patients with high systolic and high diastolic pressure. I have, at the present time, a female patient of approximately 50 years, who does not have a very high systolic, but every time the diastolic approximates 104, she gets a headache and feels as though her head is ready to "burst." Is this one of those cases to which he has reference as essential hypertension?

I have a relative who has been taking sulphocyanate for a year and recently developed acute intestinal distress with fever. Although his attending physician did not say that this drug caused

the trouble, I advised him to discontinue the cyanates, and his symptoms have gradually improved. I simply mention this case because of what others said of the danger of the cyanates.

Dr. J. Preston Davis (Lake Providence): I noticed that the discussion of this paper has dealt mostly with hypertension in men; nothing has been said about the ladies. I have noticed with hypertension in women that after the menopause, the hypertension often disappears. I wondered perhaps if there was not some connection between this finding and the case of the man who had the operation performed.

Dr. I. L. Robbins (In conclusion): Dr. Jamison mentioned thiocyanate, which was used after operation. Barker calls attention to the fact that in cases in which they could not get a reduction of blood pressure with thiocyanate and in which surgery was of no avail, they were suprised to find out that postoperatively thiocyanate was of great value in reducing the blood pressure.

Whether or not renal disease is responsible for hypertension I do not know. Dr. Hull has as much authority on his side as I have. Bright started the theory of renal disease being responsible. A speaker at the meeting of the American College of Physicians in New Orleans from information I have somehow picked up, was supposed to have said that in 50 autopsies 75 per cent showed some blockage in the main renal vessels and he says that this may possibly be the cause of some of these patients having hypertension.

Regarding extradural anesthesia, it is interesting to know that surgeons at the present time are using routine tests preoperatively to determine whether operation may prove beneficial in which they attempt to determine the spasm of vessel by giving carbon monoxide to breathe to note the height to which the blood pressure will rise and also an anesthetic to see how low the blood pressure will fall.

Cold is definitely contraindicated in hypertension. It has been known to bring on paroxysms resulting disastrously.

About the menopause and hypertension in women, I do not know what to say. After reading various and sundry things, including hypertension, that some say may occur to women at the menopause and what others say do not, I am at a loss to know with whom to agree.

In conclusion, I want to say that it is interesting to know that none of these people who report benefit—and their number is legion and their purported results do not show any of the stigmata of modesty in the big reductions achieved—we still have hypertension around us and still wonder what to do next.

THE TECHNICAL AND PRACTICAL ASPECTS OF MILK CONTROL*

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The responsibilities of the health officer with regard to milk control are many:

1. He must see that the public is supplied with a product that has all of the food value that is expected in milk; that nothing of value has been taken away from the milk and that no adulterants such as water and preservatives have been added.

2. He must see the milk is delivered to the consumer in as clean a condition as possible, that is, free from gross foreign matter such as cow feces; with a low count of ordinary, non-pathogenic bacteria and at a temperature low enough to arrest bacterial growth and so prevent souring or decomposition.

3. He must see that no milk is used which is derived from animals infected with bovine tuberculosis, Bang's disease, mastitis, foot and mouth disease or other animal diseases capable of being transmitted to man through the ingestion of infected milk.

4. His most important function is to prevent the spread of those communicable diseases of man which may be and are frequently disseminated through the medium of raw milk. This includes undulant fever, typhoid, paratyphoid, bacillary dysentery, food infections, septic sore throat, scarlet fever, diphtheria, foot and mouth disease and, according to Rosenau, poliomyelitis and epidemic arthritic erythema.

FOOD VALUE RESPONSIBILITY

With reference to the first responsibility it can be stated that such gross frauds as the watering of milk and the removal of butter fat are not nearly as common as they were several years ago. In this connection, it must be remembered that an otherwise safe milk may be contaminated by diluting

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with a water supply that is unsafe. The health officer is always concerned about the water supply of dairies. The use of chemical preservatives, to prevent low grade milk from souring or putrefying, is likewise practiced much less frequently than formerly.

Regarding the food value of milk, it is worthy of note that progressive dairymen are availing themselves of the valuable research work which has been performed by Agricultural Experiment Stations in the feeding of cows. Cows are now being fed special rations not only to increase the butter fat content but also to increase the vitamin content of milk, especially vitamin A through the use of feeds high in carotene.

RESPONSIBILITY OF CLEANLINESS

In considering the second responsibility, that of producing a clean milk, rigid standards have been laid down which touch every phase of milk production. Meticulous attention should be paid to the construction and cleansing of milk barns and milk rooms, cows should be thoroughly cleaned and udders wiped before each milking. Utensils and bottles should be scrupulously cleaned and sterilized with steam or chlorine solutions. The hands and clothing of all employees should be kept clean. Milking machines should be cleaned properly and promptly after each milking. Bottles should be capped by machine with a type of cap that completely covers the lip of the bottle. The milk should be cooled to below 50° F. and kept at this temperature until delivered to the consumer. However. the secret of producing clean milk does not lie in the promulgation of numerous regulations and the possession of well constructed barns and high priced dairy equipment. The essence of milk cleanliness lies in the honesty and perseverance of the owner and employees of every dairy. As long as human nature remains as it is, and so long as the type of help, usually found around small dairies, continues to produce our milk, we may expect difficulties in the production of a clean milk supply. A word must be said about total bacteria counts in milk. Too much attention is paid to the number of bacteria in milk and not enough to the kind of organisms. High grades of raw milk with bacterial counts below 4000 per c.c. have been known to carry *Streptococcus epidemicus* causing epidemics of septic sore throat. Even raw certified milk which frequently contains only a few hundred bacteria per c.c. has been responsible for epidemics of communicable diseases. While it is usually assumed that a milk containing a very high total count will quickly sour, such is not the case. Milk may be teeming with typhoid bacilli without alteration of taste, odor or appearance.

PROTECTION AGAINST ANIMAL DISEASES

With regard to the third responsibility of the health officer to safeguard the public against bovine diseases transmissible to man, much progress has been and is still being made. Tuberculosis in cattle, formerly a major problem, is declining rapidly due to systematic tuberculin testing of cattle with slaughter of the reactors.

The greatest menace from bovine diseases today is Bang's disease, or contagious abortion, caused by *Brucella abortus* which is shed intermittently in the milk of infected animals. Bang's testing has been done in many parishes with the discovery that upwards of 16 per cent of all cattle examined were infected. In some individual herds examined, over 50 per cent were found to be reactors. It is only by a systematic retest twice a year with slaughter of all reactors that Bang's disease will be eradicated not only as a public health menace, but a major economic problem to the live stock industry.

Streptococcus epidemicus, derived from the udders of cows, is of human origin, the cow being first infected by the milker and then contaminating the milk which produces septic sore throat when consumed raw.

PREVENTION AGAINST HUMAN DISEASES

We now come to the fourth and most important responsibility, that is, to prevent the dissemination of communicable diseases of human origin through the medium of milk.

The method on which a great deal of reliance was once placed was that of the so-called "Health Certificate" issued annually to employees in dairies. It is not necessary to inform an audience such as this that this method is totally impracticable and worthless in preventing the spread of communicable diseases through raw milk. Even where food handlers have been actually examined, including laboratory tests, epidemics have occurred.

Typhoid is the most frequent disease spread through raw milk and it would appear that the examination of stools and urine of all milk handlers would detect the carriers. Unfortunately, many typhoid carriers shed the organisms intermittently and repeated examinations may fail to reveal the carrier state until an outbreak of milk-borne typhoid.

Again, the attempt to examine milk handlers for septic sore throat has been found to be impracticable. Suppose every milk handler was examined daily by a physician, by the time that a laboratory report was received the entire supply of milk could be infected. This also applies to carriers of scarlet fever and diphtheria.

PASTEURIZATION

In view of all this, health authorities are unanimously agreed that the only practical method to safeguard the public against milk-borne diseases of both human and animal origin is some form of heat treatment of all milk. The method almost universally used is pasteurization by the holding method. In this method the milk is heated rapidly to 143-145° F. and kept at this temperature for a period of 30 minutes while being agitated. It is then rapidly cooled to below 50° F. but should not be frozen. The pasteurized milk is then bottled and capped by machines so that it cannot become contaminated subsequent to pasteurization. It is well to emphasize that pasteurized milk is not boiled milk and differs in no respects, physically, from raw milk. There is absolutely no difference between the taste of properly pasteurized and raw milk. This has been proved repeatedly by giving individuals several numbered glasses, some containing raw and some pasteurized milk; only in about 1 per cent of instances have the correct answers been given and this was in accordance with the laws of chance. The cream line is not affected. Pasteurization helps to expel many undesirable odors and flavors which are often absorbed by milk while being produced and handled, thus leaving it with a clean pleasant flavor.

Pasteurized milk or cream will keep sweet and in good condition for a much longer time than average raw milk because most of the bacteria that cause milk to sour or otherwise spoil are destroyed during pasteurization. In this connection I would like to dispel the popular but erroneous belief that pasteurized milk will not sour but will putrefy. I think that this belief has arisen due to confusing pasteurized milk with boiled milk. Pasteurized milk naturally takes a very much longer time to sour than raw milk but when it does the end result is the same. I would like to quote the experimental work taken from U. S. D. A. Bulletin 342: "When milk is pasteurized at 142° F. for 30 minutes, most of the bacteria (lactic acid) left alive in it are of the kind which cause it to sour, and there are present only a few bacteria (peptonizing) which cause it to decompose. As the milk stands, the acid formers grow and cause the milk to sour instead of decompose. However, when milk is heated at 180° for 30 minutes, the bacteria (lactic acid) which cause the souring of milk are practically all killed and those which are alive (peptonizing) continue to grow and cause the milk to decompose. Not only do certain types of lactic-acid bacteria survive pasteurization but some also grow at or near the pasteurization temperature."

What then does pasteurization do to milk? It definitely kills every known pathogenic non-spore forming organism which may be disseminated through milk. The thermal death point of every organism mentioned at the beginning of this paper is below 139° F. when held for 30 minutes. This gives a safety margin of 6° at 145°. At 145° from 95 to 99 per cent of all other non-pathogenic organisms are destroyed. The effect of pasteurization on the vitamins in milk is controversial. However, there is

unanimous agreement that there is no loss of vitamins A and D, with little effect on B and G. With regard to vitamin C, Guthrie, Hand and Sharp have shown that if pasteurization is done in vessels free from copper and under partial vacuum there is no loss at all of vitamin C. I would like to quote Mack and his co-workers as follows: "Though there is evidently some loss of vitamins B, C and G due to pasteurization, the fact remains that, with both children and experimental animals, no differences in food value have been found between raw and pasteurized milk. This indicates that milk in the quantities usually ingested contains more than enough of these essentials or is supplemented sufficiently by the other foods which make up the diet of the average child."

The study of Leslie C. Frank and his coworkers entitled, "Do children who drink raw milk thrive better than children who drink pasteurized or other heated milk?" is significant and I will quote their conclusion: "For children who are fed the average supplementary American child diet, in addition to milk, the following conclusion is justified by the foregoing studies of over 3,700 white children of ten months to six years of age: Children who are fed on pasteurized milk or other heated milk thrive as well as children who are fed raw milk, and contract certain communicable diseases less frequently."

With regard to the digestibility of pasteurized milk, investigators on nutrition have definitely shown that pasteurized milk is more digestible than raw milk. The heating tends to produce a soft curd which is more readily attacked by the digestive juice.

In discussing the pasteurization of milk, the question of the cost of the process has been frequently asked. Numerous studies conducted by the U. S. P. H. S. have shown that the cost of pasteurization, including the cost of equipment, depreciation, and fuel, is slightly less than one-half cent a gallon. It can readily be seen that pasteurization should not raise the cost of fluid milk.

One thing that pasteurization will not do is render dirty, stale, and weak milk fresh and clean. What the public wants is clean milk, and not cleaned milk. Dairymen should aim to produce a raw milk with a very low bacterial count and then pasteurize it as an additional protection. Many individually owned dairies produce a raw milk with only 2000 to 4000 bacteria per c. c. If these plants would pasteurize their product locally a very good milk supply should result because a much fresher milk could be delivered. With the present system in operation in the large cities whereby hundreds of small farmers deliver milk to collecting stations, the product is frequently three days old by the time it is delivered to the ultimate consumer.

The principle source of worry to the health officer in dealing with the small pasteurization plant is the temptation to cut short the heating time or the temperature. Fortunately, there are now two new weapons with which to check this practice; the development of the phosphatase test which very accurately detects improper heating of milk, or the addition of very small amounts of raw milk to heated milk is a distinct advance in the science of public health. The other development is the perfection of pasteurization equipment which remains locked throughout the process and which cannot be opened until the milk has reached a temperature of 143° F. and has remained at this temperature for 30 minutes.

Another advance in the production of a safer milk was made when the American Association of Medical Milk Commissions endorsed the pasteurization of Certified Milk.

EVAPORATED MILK

While this discussion deals primarily with the fresh fluid milk supply, it is worth mentioning the role which canned evaporated milk plays in relation to the public health. A recent study in large cities shows the increase in the use of canned evaporated milk with a corresponding decline in the use of fresh milk. This trend is due to some of the following factors:

1. Evaporated milk is a clean, sterilized product which cannot transmit disease.

2. It has much better keeping qualities than fresh milk.

3. It is of a uniform composition and is standardized under the Federal Food and Drug Act.

4. It produces one of the finest and most easily digestible curds of any milk.

5. It is the cheapest form of milk that can be obtained. At six cents per pound can for evaporated milk, approximately one quart of fluid can be obtained by dilution with an equal volume of a safe water supply or boiled water. This price is one-half that of the average price for fresh milk.

CONCLUSIONS

1. When all factors are weighed, pasteurization of all milk supplies appears to be the solution to the problem of milk-borne infections.

2. This process does not change the taste or appearance of milk, does not affect normal souring, and does not affect the food value of milk except that some of the vitamins are slightly reduced.

3. Pasteurization does destroy every non-spore forming pathogenic organism of human or animal origin which may be found in milk.

4. Even if the physician recommends that all milk be boiled, it is safer to have all milk first pasteurized, for, as is well known, some of the milk will be consumed raw despite the admonitions.

5. Every practicing physician in Louisiana should interest himself in the quality of the milk supply in his locality and should stimulate interest in the community to improve the supply.

6. Rosenau states that "next to water purification, pasteurization is the most important single preventive measure in the field of sanitation." He adds, "It is the best insurance both for the industry and the consumer and the simplest, cheapest, least objectionable and most trustworthy method of rendering infected milk safe."

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DISCUSSION

Dr. Julian Graubarth (New Orleans): Dr. Parrino has given us a most complete story of what constitutes good milk and also has told us how we should control it. As a pediatrician, I feel we should recommend only pasteurized milk and at no time should we permit our patients to drink raw milk; even though the milk be certified it should be further protected by pasteurization. We should have laws in our state to prohibit the sale of any milk for human consumption unless it is pasteurized,— of course I mean the milk must be of the good quality that Dr. Parrino has recommended for us before we attempt pasteurization.

If we go back to the turn of the century, in the State of New York, diarrheal diseases among infants and children were appalling, and as soon as the state went into the production of good milk the incidence of diarrheal diseases was greatly lowered. Following this, when milk was pasteurized and then later boiled, the incidence of diarrheal diseases was still further reduced. In any community where we insist on good milk, pasteurization and then boiling, the incidence of diarrheal diseases becomes almost zero.

We cannot expect the individual dairy to take care of the production of good milk without the rigid supervision of the state and we should have the law enforced to the letter.

Dr. E. A. Socola (New Orleans): It is possible to produce a safe raw cow's milk, and it may be mentioned at this time that such a milk is being produced and distributed in the larger communities of this state under the direct supervision of the Medical Milk Commission and is known as Certified Milk. Of the 400 milk-borne epidemics reported by the U. S. Public Health Service in the past ten years, none have been caused by Certified Milk. A few have been caused by inefficiently, poorly pasteurized milk. The local milk commissions are affiliated with the American Association of Medical Milk Commissions and we can certainly look to this splendid organization for leadership in this field.

Certified Milk is, however, unfortunately available only to a small portion of our population. Therefore, the general public is dependent on efficiently pasteurized milk as the source of safe milk. Furthermore, in my opinion, the ideal milk is certified pasteurized milk.

We must not overlook other factors, however, that enter into the production and distribution of a safe milk, i.e., laboratory control of the milk, veterinary and nutritional supervision of the herd, medical supervision of employees, farm control in

the form of sanitary inspection, and regulation as to distribution.

Dr. B. O. Morrison (Crowley): Another phase of the practical and technical aspects of milk control I want to stress is the education of the public on milk control. Films are shown on syphilis and tuberculosis control. I think we should also show films on the pasteurization of milk, not only to civic groups and public officials, but also to medical societies at meetings, along with papers on medicine and surgery.

The public is not asked whether or not they want bacteria-free water. They expect it because they have been educated to drink it and they should not be without it. And why should public dairymen and health officers go on a sit-down strike on the subject of sanitary, clean, organism-free milk? Should the dairymen, public officials, and civic authorities turn a deaf ear to one of the greatest weapons against bacillary dysentery, infant diarrhea, diphtheria, and undulant fever,—pasteurized milk?

Dr. A. A. Herold (Shreveport): At the risk of being called "old timey" and being in a hopeless minority, I want to say a few words for poor downtrodden raw milk. I am not in favor of the indiscriminate distribution of raw milk to the public, but I do believe that if you can get thoroughly sanitary and properly inspected, thoroughly tested for tuberculosis, I much prefer raw milk, not only for myself, but for the patient. At the risk of being told by Dr. Parrino that I do not get properly pasteurized milk, I am willing to take a "blindfold test" that pasteurized milk is not the same as raw milk and does not have the same taste.

A number of years ago I was in Boston with my children and one of my boys was knock-kneed. I took him to Dr. Lovett and told him that the boy ate well and played in the sunshine. He asked what sort of milk he drank and I answered, "pasteurized." He said, "Go back on raw milk." And from that day he took raw milk and now has perfect bones.

I do want to say that raw milk tastes better, and if you get it properly produced, I believe it is more nutritious. Certainly, the vitamins are there, and after pasteurization, we do not know how many are left; if it is done the way Dr. Parrino says it should be done, it might be all right.

Dr. W. J. Sandidge (Shreveport): I would like to endorse what Dr. Parrino said. The weight of scientific evidence is undoubtedly to the effect that pasteurized milk is a much safer milk. Many epidemics have been spread through raw milk in the past and they will undoubtedly occur in the future. With all the safeguards we attempt as health officers, we realize it is not entirely safe. I, personally, have known three typhoid epidemics due merely to a carrier handling raw milk. I am heartily in favor of what the speakers have said about producing clean milk, and personally I am in favor of pasteurizing the clean milk. I believe the certified milk people advocate, or at least offer in the majority of cases, certification of their own supply.

I feel that a great many diarrheal diseases of babies are undoubtedly due to milk, milk that is not inspected. In the last few years, it is thoroughly impractical for the dairyman to have pasteurization equipment at his own farm. Now, they have small farm plants that are thoroughly practical and the health officer can give you security that the milk is properly pasteurized. This seems to me an important point which is not realized by doctors. I urge you to advise your patients to inquire as to the milk supply. I urge you to advise them to use pasteurized milk. It seems to me that is the only way we are going to have what we want. You cannot force pasteurization on people, you cannot pass laws and say nothing but pasteurized milk shall be used. People have been known to resist those laws very much.

Dr. J. Cyril Eby (Plaquemine): I would like to present a picture of rural dairies that supplied milk to the town of Plaquemine about ten years ago. Some of the 10 or 12 dairies were scrupulously clean and were careful in the handling of raw milk and maintained a bacterial count far below 50,000 per c. c. according to the standard methylene blue reductase test. Other dairies were careless and the bacteria count was any where between 100,000 to 300,000 bacteria per c. c. Few, if any dairy, met all the standard requirements of the Louisiana State Board of Health in the handling of raw milk.

Certain improvements were recommended which consisted of the construction of concrete floors in milk barns, improving water supply, screening and improving facilities in the bottling, washing of bottles, and also the construction of sanitary pit privies.

About eight years ago tuberculin testing of the dairy herds was routinely carried out. Reactors were removed from the herd and slaughtered for meat under the direction of the Louisiana Live Stock Board. The Federal and state agencies were responsible for the Bang's disease testing which began about five years ago and the reactors were similarly disposed of.

A case of typhoid fever was reported in a dairy helper in Iberville Parish east of the Mississippi River. About 60 gallons of milk were furnished daily to a creamery in Baton Rouge. As Health Officer, I had to refuse the selling of milk from this dairy until the water supply was made safe and a sanitary pit privy was constructed.

Unquestionably childhood tuberculosis could have had its origin from the milk supplied from cows that were positive for bovine tuberculosis. Every year one or more cases of brucellosis could be

traced from a milk supply with a cow that showed a bositive Bang's disease reaction. I am in perfect accord with Dr. Parrino in advocating the pasteurization of all raw milk supplied to the general public by the dairies of this parish. This will require an educational program to be carried out before all the communities will adapt themselves to the regulations of the United States Public Health Service Standard Milk Ordinance. It has always been a question of how successfully and economically a small 50 to 100 gallon pasteurization plant could be operated. It is with pleasure that I wish to announce that at least two dairies have put in an order for the installation of a 100 gallon capacity pasteurization plant to be located on their own premises to be in operation within the next 60 days.

Dr. C. M. Jarrell (Epps): I am one of the old school from way back. None of our folks ever used cow's milk. We had three babies and they all used mother's milk and are grown men now.

We have heard a great deal of discussion here about milk, pasteurized, raw, and otherwise. I was here twelve years, doing pediatrics only. To be sure I would have all milk boiled three minutes or else use Borden's which has been brought to 140° temperature. Now, they speak about our noted authority Dr. Moss in Boston. I was one of Dr. Moss' pupils in 1926. He sent us out to the Borden units and we saw all their technic. They had for their milk 350 cows. It was dispensed just like doctors dispense prescriptions.

Boil your pasteurized milk for three minutes, or use Carnation or some other brand of milk which is safe for your babies, but first try the mother if possible. Milk may contain only 8,000 bacteria today and a million tomorrow if not properly handled.

Dr. Jerome Landry (New Orleans): The State Board of Health requires that all milk that comes into the State be inspected. A friend of mine is an inspector for the Board of Health in Bogalusa, and he was inspecting milk and a dairyman brought in five or ten cans of milk. In one can of milk was some underwear.

Dr. Paul S. Parrino (In conclusion): I had no idea of provoking so much discussion but am pleased to see so much interest taken in milk. I would like to answer one of the last speakers first, Dr. Jarrell, about correct infant feeling. With us in public health, breast feeding is our first choice, if it can be done. Next to this we advise to get the purest milk available.

In answer to Dr. Herold's question about the taste of pasteurized milk, the so-called blindfold test has been performed so often that I did not think that anyone still believed that pasteurization changes the taste, except favorably. We always advocate the production of high grade clean milk with pasteurization as an added safeguard. If the milk is not heated to more than 145° F. for 30 minutes there will be no cooked taste to the milk. Off the record, this is the advice which milk sanitarians give to those who prefer the taste of raw milk to that of pasteurized, obtain a high grade of pasteurized milk then add a few drops of sterile cow manure, this will restore the raw milk taste.

I think that Dr. Morrison's point in comparing a safe water supply with a safe milk supply is a very good one. In communities which have an approved central water supply every house has to be connected to the supply and we do the same thing where we have a sewerage system. The same should apply to the pasteurization of milk, it should be the duty of the elected officials and health officers to provide a safe milk supply for the people.

I think the point Dr. Sandidge made about so many cases of diarrheal disease about which we never know is of course true. The last account from the Public Health Service reports 581 milk-borne epidemics since 1925, which probably represents only a small percentage of such epidemics. And that is where physicians can help, by reporting cases even if there is only one case. The other doctors may each have one or two, and that would make a small epidemic.

Dr. Socola mentioned properly pasteurized milk. In all these epidemics of milk-borne disease, none was attributable to properly pasteurized milk. In the few epidemics said to be due to pasteurized milk, on investigation it was found that the milk was not heated to 145° F. or not held for 30 minutes. We now have a test to find out if the milk has been heated to the proper temperature, and better yet, we have a locked type of pasteurization equipment, which cannot be opened until the temperature reaches 145° for thirty minutes.

Answering Dr. Eby about the cost of pasteurization equipment, at L. S. U. they have a small pasteurizer and cooler combined, fifty gallon capacity, for approximately $350.00. Previously the lowest price was $800.00 or $900.00 and required a separate cooling unit.

The use of evaporated milk was brought out. In evaporated milk, we deal with a sterile product with definite uniformity from can to can or brand to brand, because they have to comply with the Food and Drug Act and they are held to a standard of fat content and total solids. The other most important point in these days of hard times is the cost of it. It is the cheapest form you can get, costing six cents a can, and diluting it with equal parts of water (the water should be boiled or use a safe supply) gives you approximately a quart of milk for six cents against the prevailing price of twelve cents for fluid milk. The use of evaporated milk is going up, whereas the use of fluid

milk is going down, showing the great use of canned milk in large cities. The cost of producing evaporated milk has something to do with it. Evaporated milk is usually surplus milk not needed for the supply of cities and can be produced at a surplus supply cost.

MILK IN ITS RELATION TO THE PUBLIC HEALTH*

ROBERT A. STRONG, M. D.†

NEW ORLEANS

Henry Dwight Chapin, in calling attention to Goethe's remark that blood is "a very peculiar juice," added that the same thing could be said of milk.

It is the food of the young of all mammalia and has long been recognized as possessing all of the fundamental physiologic elements necessary to promote growth and development, with the exception of the accessory food factors of which we speak as the vitamins. It was but a natural sequence that interest in the study of milk should be aroused and as a result, an extraordinary amount of very definite information is available.

One of the earliest things that was learned about milk is that in addition to being a valuable food, it is equally valuable as a medium for the growth and propagation of micro-organisms, both the ordinary saprophytic varieties and those pathogenic to man. These factors often produce in milk an enormous bacterial content. It is but reasonable, therefore, that the promulgation of methods to be followed by producers of milk for commercial purposes have always been one of the major undertakings of public health authorities. In spite of the progress that has been made by those who have studied the best means of safeguarding milk, the transmission of disease by cow's milk is still far too frequent. The question as to whether milk should be sold in its raw state or be subjected to pasteurization is a controversy that has been perpetuated down through the years from 1892, when the first real serious effort to produce milk under medical supervision was inaugurated by Henry L. Coit, in Essex County, New Jersey, and when Nathan Strauss started his series of pasteurization plants in New York City the following year. About that time, infant mortality from intestinal diseases was becoming nothing less than a national calamity and the problem of safeguarding milk was approached from two directions. The objective of one was to formulate plans for the production of as pure a raw milk as was possible, while the other believed that all milk used for food should be pasteurized. This latter group was inspired by the discovery of the immortal Pasteur, that wine could be prevented from souring and fermenting by subjecting it to a temperature of about 55° F., and believed that the same thing could be done to milk. Later, with the collaboration of Soxhlet, one of the pioneers in the artificial feeding of infants, a technic of milk pasteurization was developed similar to that used in wines. As a result, the controversy between the advocates of raw milk and pasteurized milk had its beginning and has been made the subject of discussion from time to time ever since.

No one can deny that the courageous plan of Henry L. Coit for the production of what is now known as Certified Milk has done more to safeguard the milk supply than any other thing. After formulating his set of plans, he found a sympathetic producer in Stephen Francisco, of Caldwell, New Jersey, and the first certified dairy came into existence under the supervision of the medical milk commission of the Essex County Medical Society. Following this, other commissions were organized over the country and in 1906, these various commissions became federated into a national association known as the American Association of Medical Milk Commissions. This organization has progressively grown until today it has become the organization that is looked to as the mentor of standards

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pertaining to the production of pure raw cow's milk.

SOME DISEASES TRANSMITTED BY RAW MILK

As the study of the best means of safeguarding milk continued, the discovery was made of an ever increasing list of diseases capable of being transmitted by raw milk. It was but a natural sequence that this strengthened the argument of advocates of pasteurization over those insisting on raw milk. Especially was this so when undulant fever among humans increased sharply. Moreover, the discovery that the *Bacillus abortus* is quite as capable of producing infection in the human as the *Brucella melitensis*, served as an additional argument for pasteurization. The transmission of bovine tuberculosis, the occurrence of epidemics of streptococcal sore throat, as well as diarrheas and typhoid fever raise the question as to whether or not raw milk should ever be used by humans.

In 1913, the experimental studies of Brennemann[1] on milk coagulation in the stomach awakened the interest of pediatricians in the use of boiled milk in infant feeding. His demonstration that the curd resulting from the digestion of raw cow's milk was large, tough, and tenacious, as compared to the curd resulting from the digestion of boiled milk, initiated the practice of boiling all milk used in infant feeding. Since this became the universal practice of all pediatricians, the decline in diarrheal diseases has been nothing short of amazing. This, of course, has been largely due to the greater ease with which the finer curd in boiled milk is digested, but the sterilization of the milk by boiling has been the principal factor in the reduction of the so-called summer diarrheas.

Ten years ago, several epidemics of streptococcal sore throat occurred in and around Boston, and it was found that some of these could be traced to milk obtained from certified dairies. As a result, a considerable number of physicians in Boston requested the producers of Certified Milk working under the Boston Medical Milk Commission to supply a "pasteurized certified milk." This suggestion caused a storm of protest to come from the Essex County (New Jersey) Medical Society, and a bitter controversy developed between the two societies as well as the New England Journal of Medicine and the Newark (New Jersey) Evening News. It is not difficult to understand and sympathize with the attitude of the Essex County Medical Society, to whom credit is due for conceiving Certified Milk, as a result of the vision of Henry L. Coit. Every physician and pediatrician will agree fully that the standards under which Certified Milk is produced and sold must never be lowered. Moreover, the promoters of Certified Milk are entitled to the gratitude of everyone interested in the safeguarding of infants, but it is believed that the motives of those who advocated pasteurization of Certified Milk were at the time misunderstood.

PASTEURIZED CERTIFIED MILK

For a while, nothing was done to comply with the requests of the Boston physicians until 1935, when a resolution was introduced at the annual conference of the Association of American Medical Milk Commissions and the Certified Milk Producers Association of America, which was held in Atlantic City, to permit the pasteurization of Certified Milk by any local medical milk commission who desired to do it. According to Stearns,[2] writing in the official magazine of both of the associations, physicians, pediatricians, health officers, and educators, as well as milk producers from all parts of the country who were in attendance, hailed the step as one of the most progressive developments in the history of Certified Milk. They pointed out that it will not only add to the safety of an already notably safe and sanitary milk, but will greatly increase its sales because pasteurization has become almost universally accepted as a method of assuring safer milk.

The impression would be gained that such an important step by an organization of this type would settle for all times the controversy in favor of the pasteurization of all milk, but apparently it has not, because it is noteworthy that even in our own state, there are men who still insist on the su-

periority of raw milk. Moreover, by billboard advertising as well as radio announcements, propaganda is being spread in behalf of producers of raw milk. It is not easy to understand this, except that it is due to the fact that a number of the small producers of raw milk feel it is "unfair" to expect them to install the necessary pasteurization equipment. In the meantime, we are still having milk-borne epidemics and at the present time, in our state there has been a sharp increase in typhoid fever, which has been traceable to some of these raw milk dairies. I believe that these and similar epidemics will continue to occur just as long as raw milk is being sold.

SUMMARY

I am thoroughly cognizant of the fact that there are many things which contaminate milk which none of us would care to ingest even though the milk is pasteurized. Therefore, it cannot be too strongly emphasized that pasteurization should not be used to "cover up" dirty milk. The concensus of informed and unbiased opinion is that all milk should be produced in accordance with the methods and standards, which were initiated by Henry L. Coit, in 1892, and since improved as a result of 47 years of exchange of ideas in an annual joint conference between physicians and milk producers. After being produced in accordance with these standards, it should then be effectively pasteurized in modern equipment. Furthermore, it should be known that improper pasteurization is worse than no pasteurization at all, because it inspires a feeling of artificial security, just the same as an attractive "Grade A Raw Milk" label does when placed on a bottle of dirty milk. In order to determine the efficacy of pasteurization, the phosphatase test should occasionally be applied. This test is based upon the fact that phosphatase, an enzyme in raw milk, hydrolyzes a phenol ester and thus liberates phenol. The phenol is then determined colorimetrically and if any is still present, it is an indication that the pasteurization is incomplete. When it is complete, all of the phosphatase is destroyed and cannot, therefore, act on the phenol ester.

It cannot be successfully denied that until universal pasteurization is practiced, we cannot expect to eliminate milk-borne diseases.

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NEW ORLEANS
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GRADUATE MEDICAL ASSEMBLY

The fourth of the New Orleans Graduate Medical Assemblies will be held this year February 26-29 with headquarters in the Roosevelt Hotel. This meeting will be distinguished by this fact: it is going to honor the sixtieth year of Dr. Matas' active practice.

This particular effort to encourage graduate teaching has been extremely successful. Starting with a relatively small registration, it has grown by leaps and bounds until last year nearly one thousand doctors from states all over the union met to hear what the distinguished essayists had to say in their particular lines. This year the meeting should be even more outstanding. Some of the speakers have already been announced in the Journal. Selecting at random some of the others who appear on the program it might be said that Dr. H. L. Bockus, Professor of Gastroenterology and head of the Gastroenterologic Division of Pennsylvania University Graduate School of Medicine, will talk on the management of peptic ulcer. Dr. Q. U. Newell will discuss irradiation therapy in gynecology, and retrodisplacement of the uterus. Dr. Newell, Professor of Obstetrics and Gynecology at Washington University School of Medicine, is a member of the Staff of the Barnes Hospital as well as five other hospitals. He belongs to all of the important national organizations having to do with his specialty. Dr. W. J. Dieckmann is another well-known obstetrician and gynecologist to appear on the program. He is Associate Professor in the Department of Obstetrics and Gynecology in the University of Chicago and is attending obstetrician and gynecologist to the Chicago Lying-In Hospital. He is also one of the associate editors of the American Journal of Obstetrics and Gynecology.

One of the most active ophthalmologists in this country and one who is noted for the beautiful atlas entitled "Photographs of the Fundus Oculi" is Dr. Arthur J. Bedell of Albany. Dr. Bedell's subject should be of interest not only to the specialist but to all men who practice medicine as he is prepared to give a demonstration of fundus changes that take place in systemic disease and to illustrate these with colored photographs.

Urology will be represented by Dr. W. F. Braasch of the Mayo Clinic who is Professor of Urology in the Graduate School, University of Minnesota. He is the author of two well-known books on pyelography and urography; he is a prolific writer; he

is known to many men outside of his specialty because of his splendid work in combating socialized medicine in this country and he is a speaker of force and of interest. Dr. Shields Warren is one of the younger group of pathologists who has made of pathology truly a living and live subject. Assistant Professor of Pathology in the Harvard Medical School, he is also pathologist of the Harvard Cancer Committee, to the New England Deaconess and to other hospitals. He will talk on pathologic changes that take place in diabetes, as well as, in his other address, on the effect irradiation has on tumors and normal tissues. Dr. Warren will conduct a clinicopathologic conference, surgical in nature, which should be not only interesting but extremely instructive.

Other well-known medical men will appear on the program. The details of their talks and a brief sketch of their accomplishments will be published in a subsequent issue of the Journal.

The opportunity of hearing and of learning from a group of men who have been selected as speakers at the Graduate Medical Assembly is a very definite stimulus to the doctors who live in New Orleans. Fortunate is their lot. They will not have to travel in order to hear these men but they will be brought right to their doorstep. Fortunate are the doctors of Louisiana who will not have to go far to hear these essayists. Just how fortunate they are will be shown by the fact there will be present a large number of doctors from the surrounding states and even from distant states who will come to take advantage of the program and to enjoy at the same time the beautiful early spring weather which will be found in New Orleans at this time of the year.

MEDICAL ECONOMICS

It is to be hoped that the members of the Louisiana State Medical Society have read the Platform of the American Medical Association which appeared in the last issue of the Journal and which also has been published in the official periodical of the American Medical Association. These several planks represent an extremely well thought out and well expressed opinion of what the doctors in this country stand for. Furthermore, they refute many of the reasons advanced by the proponents of state medicine for the introduction of this system into our democratic United States.

Plank No. 7 says "The continued development of the private practice of medicine, subject to such changes as may be necessary to maintain the quality of medical services and to increase their availability," a truly vital statement of fact. Amplifying this plank it should be pointed out that the United States sickness and death rates are lower than any great country in the world. This has been obtained because the medical profession recognizes the importance of preventive medicine. It has not come about as result of the actions of a medical profession organized by the government and controlled by bureaucrats.

It is obvious that there are certain sections of the population who, because of economic reasons, are unable to obtain services of private physicians. These people are taken care of adequately by the physician at a small cost, or without charge. In the bigger centers of population they obtain in medical out-patient clinics and in the wards of charitable hospitals, service second to no other service rendered to any person anywhere in the world. These doctors are not paid. To the physician who gives free service, whether it be in his office or in a clinic, there is undoubtedly a feeling that they are not being treated entirely justly and that they render a free service which is given by no other profession or business in the United States. The medical profession thinks possibly some of this inequality can be obviated by certain prepayment plans to cover the cost of medical care. These schemes are being worked out and elaborated in many communities without the intervention of the government.

Lastly, the concluding sentence of this plank bears reiteration and accentuation. It follows: "It (the medical profession) continues, however, to feel that the development of the private practice of medicine

which has taken place in this country has led to higher standards of medical practice and of medical service than are elsewhere available and that the maintenance of the quality of the service is fundamental in any health program."

OBSTETRIC ANALGESIA

One of the objections raised to the use of analgesics in the management of the delivery of the pregnant woman is that it is harmful to the child. The prospective mother, her mother or some other female member of the family will say that they would prefer not to have any anesthetic used or analgesia used when the child is being brought into the world because, succeeding delivery, the child may not be as strong and healthy as it would be if the mother had not taken a drug. It is also their belief that the infants are more likely to die, nor is this impression solely peculiar to the laity. Many physicians feel the same way.

The only obvious method of determining whether obstetric analgesia does have an ill effect on the babies born of mothers who have had one or another commonly used drug would be to contrast a large series of infants in one group born of mothers who have not had analgesia with those who have had it. This has been done by Kotz and Kaufman* who selected 800 consecutive births for study. In 500 cases the mother was given paraldehyde alone or in combination with some other drug. In 100 instances she was given pentobarbital sodium and scopolamine and 100 in which the mother was treated by the McCormick modification of the Gwathmey technic. The infants of 100 mothers who had not received drugs were the controls. The average dose of paraldehyde was 17.5 drachms (66 c. c.), the largest amount given was 38 drachms (142 c. c.). Approximately one and a half doses of the McCormick mixture plus 5 grains (0.32 gram) of pentobarbital sodium was given to a second group. To the third group was administered 6.78 grains (0.44 gram) of pentobarbital sodium and 1/200 grain (0.3 mg.) of scopolamine.

The mortality rate, the initial loss of weight, as well as the rate of gain of weight, the temperature curve and the pulse and respiration curves for ten days were all studied. The average duration of the labor was seventeen and a half hours in primiparas, and twelve and a half hours for multiparas. The effect of analgesia on the fetal mortality rate, corrected, in the paraldehyde treated mothers group, was 0.8 per cent, in the McCormick series of babies, 2 per cent, one of whom had hydrocephalus. In the pentobarbital sodium group there was a corrected mortality of zero. These figures compare satisfactorily with the figures of any delivery in which the mother does not receive analgesia.

No effect could be found on the child in so far as the weight was concerned; as a matter of fact the babies of the mothers who received the analgesia did better than the babies that were born of mothers who had not received it. There were no variations in pulse, temperature and respiration, nor were there noted any significant differences in the two groups in so far as the appetite, food consumption, dehydration or attitude was observed. The authors conclude that obstetric analgesia properly administered does not increase infant mortality or morbidity rate. These facts should be known when objection is made to the use of a method which most obstetricians now consider to be of great value.

*Kotz, Jacob, and Kaufman, Morton S.: Obstetric analgesia, J. A. M. A., 113:2035, 1939.

HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

TUMOR CLINIC OF THE SHREVEPORT CHARITY HOSPITAL

Shreveport

The weekly meeting of the Tumor Clinic held December 5 was presided over by Dr. George H. Robinson, assistant superintendent of the Hospital. The program was turned over to Dr. Harold G. F. Edwards, Clinical Director of the Tumor Clinic, who presented:

THE BIOPSY PROBLEM

The intelligent management of any tumor demands a knowledge of and the histologic proof of the nature of the tumor to be treated, and furthermore, a tissue study is often desirable to determine the effect of irradiation on tumors which have been successfully treated by that method.

The biopsy problem is a most important one, and while there may be different opinions concerning the correct technics of performing a biopsy there are also differences of opinion regarding the preparation of the tissue secured by the biopsy.

Speaking of the diagnoses of cancer, Ewing says: "A diagnosis may be said to have been obtained when the clinician has been placed in command of data which will enable him to understand the origin, cause and prognosis of the case in hand. This information must include the results of the physical examination of the patient, roentgenological study and histologic study, which reveals the structure of the tumor, its grade of malignancy, and the grade of radiosensitivity. Without all these data the diagnosis must be regarded as incomplete."

The question of safety of a biopsy under ordinary conditions is generally admitted. To claim that it is a safe procedure under all conditions is as Mathews states "as erroneous as to claim that it is generally a dangerous procedure." Some clinical judgment must prevail in every case to determine the safety of the method. The methods which I advocate have served me well in more than 7,000 biopsies and are so simple that anyone with a little time can easily carry them out.

OPEN AND ULCERATED TUMORS

Tumors occurring on the cutaneous envelope or tumors beneath the skin which have become ulcerated may be easily biopsied by making use of Ronguer forceps. For lesions in the nasal passage or oral cavity the Martin biopsy forcep is used. A biopsy of the cervix is best taken with a Kaplan forcep—this is a rugged instrument with a good cutting jaw, so necessary in cervical lesions; surface biopsies require no anesthesia and are practically without pain. Immediately after the tissue has been taken it should be placed in 10 per cent formalin solution.

ASPIRATION AND PUNCH BIOPSIES

Deep-seated tumors, or tumors below the skin often present difficult diagnostic problems. Many tumors should not have incisional biopsies done; this is especially true of liposarcomas, neurogenic sarcomas, fibrosarcomas, bone tumors, and tumors of the breast. All of these may be explored with complete safety with the needle biopsy. This method has now been extended to include the lung, liver, certain pelvic tumors and even abdominal masses. I believe the needle method best for soft tumors and that the firmer tumors are best biopsied with the Hoffman punch. The skin and tissues overlying the tumor are infiltrated with novocain and a small puncture wound is made with a pointed knife to avoid getting surface epithelium into the needle or punch. If the needle method is used a 3 or 4 inch, 17 gauge needle is attached to a 10 c.c. Luer or Record syringe. The needle is introduced with the piston closed until the needle is felt to enter the tumor. The piston is practically withdrawn to create a vacuum within the needle and syringe, and the needle again pushed into the tumor with rotary motion forcing particles of the tumor into the needle. This procedure may be repeated several times to insure sufficient material. The vacuum is now broken by loosening the needle after which the needle is replaced on the hub and withdrawn from the tissue. The small flake of tissue is expelled from the needle on to a microscope slide and smeared out by pressure with another slide, while another piece of tissue is placed in solution of formalin for section study.

The Hoffman punch consists of a hollow metal cannula, 14 gauge, which is fitted to a handle; within this cannula is a cylindrical rod with a barb near its end. In using the punch the skin and tissues are prepared as for the aspiration biopsy and the skin punctured with a knife, the punch is closed and then introduced into the tumor. When the point is felt within the tumor the needle is opened and the cutter is exposed, then gentle opening and closing of the handle causes a specimen of the tumor to be caught in the barb. The cutter is then completely withdrawn through the cannula and the specimen removed from the cutter. The procedure may be repeated as often as necessary. This method permits of rapid examination by crushing a small particle of the tumor between slides. The Hoffman punch, moreover, offers the advantage of a larger particle of tumor than is possible to obtain with the aspiration method, permitting paraffin section study.

The great objection to either the aspiration or punch biopsy usually comes from the pathologist or surgeon who has failed to become familiar with the needle or punch method of biopsy and who has an inborn adverse reaction to the method,

with no evidence whatsoever to support his opposition. To the contrary, however, there exists any number of experimental and clinical investigations which prove the safety of the method. Considerable experience is necessary before the pathologist can be certain of his diagnosis. The method can be mastered by the pathologist who wants to take advantage of this method. The procedure can be quickly performed and the pathologist can render his opinion within a few minutes. The method has the full endorsement of Ewing and Stewart, who have studied material from thousands of punch and needle biopsies. In my own experience working with my confrère, Dr. Mathews, studies of material from more than 400 cases have demonstrated the value of such methods.

Biopsy study of neck nodes, unless one suspects metastatic carcinoma, should be incisional, and include a sizeable portion of the gland involved, not a small remote gland. The pathologist demands, and should have, sufficient tissue to study the architecture of the gland to reach a satisfactory conclusion. The needle biopsy is entirely satisfactory for metastatic nodes.

Curettage of uterine cavity for diagnosis is so common a procedure that no description is necessary. Only a word of caution: the curettings should include every portion of the endometrial lining.

J. T. NIX CLINIC

New Orleans

At the meeting held in December, Dr. C. E. Gorman presented the following paper:

INTESTINAL INTUBATION BY USE OF MILLER-ABBOTT TUBE

Once again medical research has come to the aid of the harassed surgeon. It has prevented a great number of primary and secondary operations. Cases that, due to their very nature, render the patient a poor surgical risk are either saved from surgery or they are improved so that surgery may be accomplished safely.

Operations for postoperative intestinal obstruction, previously the only outlet, always accompanied by a high mortality, may now be avoided. The unsatisfactory enterostomy, with its tedious care and resultant fecal fistula, may be prevented. The percentage of intestinal obstruction cases treated by non-surgical methods has risen sharply. In the article, "Intestinal Obstruction," which appeared in the New Orleans Medical and Surgical Journal, November, 1936, the author called attention to a group of such cases escaping surgery.

As a review of our ideas at that time, we wish to repeat our impressions:

1. Patients with the indwelling naso-duodenal catheter develop alkalosis and marked dehydration.

2. If the obstruction is due to fecal impaction good results can be expected non-surgically.

3. The use of the Vacoliter bottle has simplified the administration of glucose and saline by vein.

4. The combination of the naso-duodenal indwelling catheter with glucose-saline infusions decreases the risk involved in operating on such a patient.

By the methods mentioned above a great number of cases escaped surgery, much to the joy of the surgeon. Nevertheless certain of these patients had to be operated upon. The advent of the Miller-Abbott tube further reduces the necessity for operative relief of postoperative obstruction and paralytic ileus.

The experimental trail of intestinal intubation was blazed by A. L. Levin, and has now been surfaced by Miller and Abbott. The former introduced the Levin naso-duodenal tube, the latter presented the Miller-Abbott double lumen (ballooned) naso-duodenal tube.

Since the contraindications for the sole use of the tube are less numerous than the indications we shall discuss these first. Intestinal obstructions due to: (1) Perforated gastric ulcer; (2) volvulus; (3) incarcerated hernia; (4) mesenteric thrombosis; (5) intestinal gangrene; (6) irreducible intussusception. These are not absolute contraindications against intestinal intubation. They are conditions which are recognized as emergency surgical conditions and demand immediate surgery. On the other hand, we do propose the application of naso-duodenal intubation methods, not as a curative measure, but as a supportive and relief measure. There are very few and rare conditions that would prevent intestinal intubation.

The indications for the Miller-Abbott double lumen tube are intestinal obstructions due to: (1) Paralytic ileus; (2) kinking of intestinal tract; (3) postoperative intestinal adhesions; (4) inflammatory adhesions and reaction; (5) intra-abdominal tumefactions; (6) intrapelvic tumefactions; (7) miscellaneous.

Paralytic ileus has always been a very dangerous and serious condition. This is especially true when it develops in a nervous or neurotic patient. It is quite disconcerting to the surgeon when, after completing a beautiful operation, no infection present, a paralytic ileus develops and a subsequent intestinal obstruction. These cases are ideal for the use of the Miller-Abbott double lumen tube. The technic being practically the same in all cases it will be described later.

Postoperative intestinal adhesions are probably the most common cause of intestinal obstruction. Unfortunately, these patients are susceptible to frequent recurrences. They may cause a complete or partial obstruction. This type of indi-

vidual can very often be relieved of the immediate obstruction by this method. They are advised then to follow one of two courses:

1. Surgery and the liberation of the adhesions and the instillation of papain. This is the method of choice.

2. Prevention of constipation by the daily use of petrolagar or mineral oil. This is used for those cases refusing surgery.

Occasionally the bowel will develop a simple kink upon itself. In the wake of the kink follows edema and progressive obstruction. The Miller-Abbott tube relieves the obstruction at the exact site of the kink and edema. The edema reduces and allows the tip of the tube to pass through the obstructed area.

Quite often an obstruction results from peritoneal inflammation or reaction. These patients respond very nicely.

Intra-abdominal or intrapelvic tumefactions are frequent. In these cases the intestinal patency, and peristalsis is usually restored. This improves the patient's general condition and reduces toxicity. At the time this goes to press there is such a patient now in the hospital, relieved of her obstruction and ready for surgery. Presenting herself with nausea, vomiting, acute abdominal pain, and markedly distended abdomen, a diagnosis of intestinal obstruction was made. This was confirmed by x-ray. A firm, rounded mass could be felt in the suprapubic area; a diagnosis was made of acute intestinal obstruction due to an intrapelvic tumefaction. The Miller-Abbott tube was inserted and oil instillations followed by enemas were instituted. The patient improved steadily as was manifested by clinical results, x-ray findings and the patient's own testimony. Several days later the obstruction was completely relieved, the mass could easily be felt, the Miller-Abbott tube removed, gastrointestinal series of x-rays was negative, and the patient is now a good surgical risk.

The case chosen to summarize is one of a paralytic ileus (neurotic basis). Miss E. (#M 3337), 28 years of age, was admitted with a diagnosis of retroverted uterus, cystic oophoritis, hyperplastic endometritis, and chronic appendicitis. She was of a nervous temperament. Operation consisted of dilatation and curettage, resection right ovary, uterine suspension, and appendectomy. The patient left the table in good condition. On the second postoperative day she developed a marked gastric distention. A naso-duodenal catheter was inserted with some relief. Oil instillations and enemas were instituted with the return of much flatus. Several hours later the entire abdomen was distended. Subsequent enemas resulted in no fecal matter and no flatus. X-ray by Drs. Fortier and Gately reported "several lops of distended small intestines seen with multiple fluid levels. Moderate gas distention of the colon noted. The findings suggest ileus."

The naso-duodenal catheter was removed and replaced with a Miller-Abbott tube. The x-ray was then reported as: "Marked dilatation of loops of small intestines with multiple fluid levels. Large intestines are not distended at this time. Conclusion: Evidence of ileus or intestinal obstruction. Miller-Abbott tube is in the stomach." Re-ray later showed "tip of tube is now in the third portion of the duodenum." The patient began to improve clinically. Twenty-four hours later the re-ray showed "tip of Miller-Abbott tube is well down in the small intestines. There is marked decrease in the gas distention." Another re-ray twenty-four hours later showed "considerable of the tube is seen in the small intestines with marked decrease in the amount of gas seen in the small bowel." The patient continued to improve. The enemas began to yield flatus and finally fecal matter. The distention diminished. The tube was removed on the sixth day and the patient continued to improve without further complication. She was discharged in excellent condition.

TECHNIC OF INTUBATION

The nasal mucous membrane is anesthetized by topical application of either cocaine or butyn solution. The tube is well lubricated, the balloon is deflated. The tube is then placed through the nostril into the nasopharynx and esophagus. The progress to the stomach is facilitated by aid of drinking water. About every three hours three or four inches of tube are added. The tube's progress is followed by x-ray. When the tip is in the duodenum the balloon is inflated with 30 c. c. of air. The tube is not attached to the nares. Liquid albolene is used as a nasal spray or drops. Usually the tube will progress due to the peristalsis created by the balloon acting as a bolus. If the tube does not progress of its own accord then approximately three to five inches are gently forced into the stomach. When the patient is well the question of removal always arises. The removal is very simple—merely lubricate the nostril and gently but firmly pull the tube outward.

IMPRESSION

1. The use of the Miller-Abbott tube has further decreased the number of patients necessitating emergency enterostomy.

2. The use of the tube enables the patient to be improved physically and to be changed from a poor to a good surgical risk.

3. The tube transforms a great number of emergency operations into elective surgery.

4. The use of the tube allows oral feeding as the obstruction becomes released.

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TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

CALENDAR

January 2. Orleans Parish Medical Society, Board of Directors, 8 p. m.
Eye, Ear, Nose and Throat Hospital Staff, 8 p. m.

January 3. Clinico-pathologic Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
Hutchinson Memorial Clinic Staff, 8 p. m.
Mercy Hospital Staff, 8 p. m.

January 4. Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

January 8. Orleans Parish Medical Society, Installation of Officers, 8 p. m.

January 9. Eye, Ear, Nose and Throat Society, 8 p. m.

January 10. Clinico-pathologic Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
Touro Infirmary Staff, 8 p. m.

January 11. New Orleans Hospital Council, Touro Infirmary, 8 p. m.

January 15. Hotel Dieu Staff, 8 p. m.

January 16. Charity Hospital Medical Staff, 8 p. m.

January 17. Clinico-pathologic Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.
Charity Hospital Surgical Staff, 8 p. m.

January 18. Clinico-pathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

January 19. I. C. R. R. Hospital Staff, 12 noon.
New Orleans Dispensary for Women and Children Staff, 8 p. m.

January 22. Orleans Parish Medical Society, 8 p. m.

January 23. Baptist Hospital Staff, 8 p. m.

January 24. French Hospital Staff, 8 p. m.

January 25. L. S. U. Faculty Club, 8 p. m.

January 31. Clinico-pathologic Conference, Charity Hospital and L. S. U. Medical Center, 2 p. m.

During the month of December, besides the regular meeting of the Board of Directors, the Society held the fourteenth Stanford E. Chaillé Memorial Oration and a regular scientific meeting.

Dr. Hugh Roland Butt of the Mayo Clinic, Rochester, Minnesota, delivered the Chaillé Memorial Oration. His subject was "Advances in the Knowledge of Vitamins, with Particular Reference to Vitamin K." Dr. Waldemar R. Metz read a short sketch on Dr. Chaillé and then read the names of the members who died in 1939.

On Saturday, December 9, the annual election of officers was held. The following officers were elected for 1940:

President: Dr. Gilbert C. Anderson; first vice-president: Dr. Edmund L. Leckert; second vice-president: Dr. Andrew V. Friedrichs; third vice-president: Dr. Daniel J. Murphy; secretary: Dr. Edwin L. Zander; treasurer: Dr. Edwin H. Lawson; librarian: Dr. Donovan C. Browne; additional members of the Board of Directors, Drs. Henry B. Alsobrook, Max M. Green and Cassius L. Peacock.

At the scientific meeting held Monday, December 11, the following program was presented:

Here and There in Anesthesia
By.....Dr. Ansel Caine
Discussed by Dr. Isidore Cohn.

Hyperpyrexia: Its Indications and Complications. Evaluation of Results Based on 5500 Fever Sessions
By.....Dr. J. A. Trautman (by invitation)
Discussed by Dr. W. L. Smith (by invitation), Dr. Nathan H. Polmer and closed by Dr. Trautman.

The following doctors were elected to Active Membership: Drs. Stanley Cohen, Louis B. Leggio, Frank R. Lock and Richard E. Selser.

Dr. C. C. Bass was elected to Honorary Membership in the Society at the regular meeting held December 11.

Three active members resigned during the month: Drs. James S. Davidson, Jr., John P. Leake and Henry J. Otto. Dr. Davidson is leaving New Orleans to practice in Alabama.

It is with regret that we report the loss by death of four active members: Drs. Leonhard E. Devron, Amédée Granger, Joseph N. Roussel and David L. Watson.

NEWS ITEMS

A symposium on pneumonia was presented before the Franklin Parish Medical Society at Winnsboro, November 15. The following papers were presented: "The Pathology and Pathogenesis of Pneumonia" by Dr. John R. Schenken; "The Diagnosis and Differential Diagnosis of Pneumonia" by Dr. Robert H. Bayley; "The Treatment of Pneumonia" by Dr. J. O. Weilbaecher, Jr.

Dr. Carlo J. Tripoli was in charge of arrangements for this program.

Dr. Robert A. Strong made the graduation address to officers completing the course prescribed for flight surgeons at Randolph Field, Texas, November 10. Dr. Strong then attended the American Academy of Pediatrics meeting in Cincinnati, November 16-18.

The following members of the Society attended the meeting of the Southern Medical Association in Memphis, November 21-24: Drs. Ruth G. Aléman, C. C. Bass, Elizabeth Bass, Merrill C. Beck, Donovan C. Browne, Wiley R. Buffington, B. I. Burns, Edgar Burns, Guy A. Caldwell, Isidore Cohn, Maurice Couret, Joseph S. D'Antoni, Michael E. DeBakey, John F. Dicks, Dean H. Echols, B. G. Efron, Ernest Carroll Faust, Lewis A. Golden, Peter Graffagnino, Béla Halpert, William H. Harris, Charles S. Holbrook, James K. Howles, C. Barrett Kennedy, Marion E. Kopfler, Maxwell E. Lapham, Lucien A. LeDoux, Francis E. LeJeune, Maurice Lescale, A. L. Levin, Henry J. Lindner, Randolph Lyons, Emma S. Moss, Emile Naef, Hugh Page Newbill, Alton Ochsner, Neal Owens, Joseph W. Reddoch, John T. Sanders, John R. Schenken, H. Theodore Simon, Earl Conway Smith, Edwin A. Socola, Robert A. Strong, George J. Taquino, Robert W. Todd, Carlo J. Tripoli, M. T. Van Studdiford, William A. Wagner, Theodore A. Watters, and Julius Lane Wilson.

Dr. Isidore Cohn presided at the meeting of the Central Appendicitis Committee of the Southern Medical Association with all state chairmen which was held November 22. The meeting was to prepare the campaign plans for the reduction of acute appendicitis in the South.

Dr. L. R. DeBuys participated in a round-table discussion on prenatal care sponsored by the Children's Bureau of the Department of Labor in Washington, December 2.

The Louisiana Association of Public Health Workers met in Shreveport at the Washington-Youree Hotel, December 4-6. Drs. Albert E. Casey, Branch J. Aymond, George McCoy and W. Harvey Perkins presented papers. Dr. James T. Nix presented two papers. Dr. George H. Hauser held round-table discussions Monday and Tuesday afternoons for the laboratory workers and directors to discuss laboratory problems. Drs. Owen F. Agee, R. Alec Brown, Lee R. Centanni, Joseph A. O'Hara, Robert W. Todd and Virginia E. Webb attended the meeting.

Dr. Roy H. Turner was elected secretary of the section on medicine of the Southern Medical Association at the recent meeting held in Memphis.

Dr. Hilliard E. Miller has been appointed to the Board of Regents of the American College of Surgeons for a three-year term.

Dr. Rupert E. Arnell was elected to the Board of Directors of the Child Welfare and Community Health Association and has been appointed Director of the Maternity Service.

At the meeting of the Southern Surgical Association, which was held in Augusta, Ga., December, 5-7, Dr. Alton Ochsner was re-elected Secretary of the Association. Drs. Rudolph Matas, Mims Gage, Howard Mahorner, and Ambrose Storck presented papers at this meeting, and Dr. Guy A. Caldwell was made a member of the Association.

Dr. H. Ashton Thomas addressed the members of the Fifth District Medical Society at Monroe on December 5. His subject was "Rhinologic and Otologic Problems of the General Practitioner."

The following program was given at the joint meeting of the New Orleans Gynecological and Obstetrical Society and the Mercy Hospital Staff, Wednesday, December 6: "Upper Urinary Tract Infection" by Dr. Max Green; "Urethral Caruncle" by Dr. Philips J. Carter; "Granuloma Venereum of the Cervix" by Dr. Rupert E. Arnell; "Criteria for the Management of Toxemia of Pregnancy" by Dr. William F. Guerriero.

The following doctors attended the meeting of the Southern Surgical Association at Augusta, Georgia, December 5-7: Drs. Isidore Cohn, Joseph

A. Danna, Mims Gage, Lucian H. Landry, Howard R. Mahorner, Rudolph Matas, Hilliard E. Miller, Alton Ochsner, James D. Rives and Ambrose H. Storck.

Dr. Malcolm T. MacEachern of Chicago, associate director of the American College of Surgeons, and his assistant, Dr. E. W. Williamson, spent a week in New Orleans completing arrangements for the Southern sectional meeting of the College here January 17-19. Dr. Mims Gage is general chairman for this meeting.

At the meeting of the Lafourche Valley Medical Society held at Houma, December 6, the following program was presented: "The Treatment of Lobar Pneumonia" by Dr. Carlo J. Tripoli; "Sacral Analgesia in Gynecology" by Dr. H. Vernon Sims.

A demonstration for rapid sputum typing for pneumonia was presented by Dr. Tripoli.

Dr. James K. Howles presented a paper at the quarterly meeting of the Seventh District Medical Society held at Opelousas, December 7. The subject of his paper was "Management of Common Skin Conditions Seen in General Practice."

Drs. Charles S. Holbrook and Leon J. Menville read papers before the meeting of the Third District Medical Society at New Iberia, December 7. The subject of Dr. Menville's paper was "Present Day Methods of Diagnosing Tumors of the Breast." Dr. Holbrook's paper was "Differentiating Depressive Reactions from Somatic Diseases."

Dr. P. T. Talbot attended the meetings of the Third District, Seventh District and the Lafourche Valley medical societies in the interest of the Louisiana State Medical Society.

Members attending the annual meeting of the Southeastern Branch of the American Urological Association in Biloxi, December 7-9, were Drs. Edgar Burns, Hugh T. Beacham, Max M. Green, Roger J. Mailhes, John G. Menville, and Robert F. Sharp.

Dr. Wilmer Baker attended the meeting of the American Society of Anesthetists at Los Angeles, December 14-16.

TREASURER'S REPORT

Actual Book Balance 10/31/39	$3,360.25
October credits	718.17
Total credits	$4,078.42
November expenditures	452.91
Actual Book Balance 11/30/39	$3,625.51

LIBRARIAN'S REPORT

During November, 84 volumes have been added to the Library. Of these 54 were acquired by binding, 6 by subscriptions, 16 by gift and 8 from the New Orleans Medical and Surgical Journal. Notation of new titles of recent date is appended to this report.

Members of the staff have collected material on the following subjects at the request of physicians:

Convulsions.

Hobbies of physicians.

Epidemiology of rheumatic heart disease.

Relation of air conditioning to sinusitis.

Gout.

Incidence of chorea.

Human bites.

Undescended testicle—operative treatment.

Medical treatment of amebic abscess of liver.

Benign ulcer of the esophagus.

Multiple polyposis of the stomach.

Our records show that 1,062 volumes were loaned to physicians during the month. An additional 1,009 were loaned to students for overnight use, giving us a total circulation of 2,071. These figures do not include the great use of books and journals within the Reading Rooms.

NEW BOOKS

Christopher, Frederick, ed.: Textbook of Surgery, 1939.

American Neurological Association Transactions, 1939.

American Psychoanalytic Association Bulletin, 1938-39.

Manson-Bahr, Philip: Dysenteric Disorders, 1939.

Haden, R. L.: Principles of Hematology, 1939.

Whillis, James: Elementary Anatomy and Physiology, 1939.

Yeomans, F. C.: Sclerosing Therapy, 1939.

McLellan, F. C.: Neurogenic Bladder, 1939.

American Can Company: Canned Food Reference Manual, 1939.

International Cancer Congress: Abstracts of Papers, 1939.

National Foundation for Infant Paralysis: Infantile Paralysis, 1939.

Stimson, A. M.: The Communicable Diseases, 1939.

Northwestern University Medical School: Occupational Disease Symposium, 1938.

Cabot, R. C.: Physical Diagnosis, 1939.

Gilbert C. Anderson, M. D.,
Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

CALENDAR

New Orleans Graduate Medical Assembly	February 26-29, 1940	New Orleans.
Louisiana State Medical Society	April 22-24, 1940	New Orleans.

PARISH AND DISTRICT MEDICAL SOCIETY MEETINGS

Society	Date	Place
Bi-Parish	First Wednesday in March	Jackson.
East Baton Rouge	Second Wednesday of every month	Baton Rouge.
Morehouse	Second Tuesday of every month	Bastrop.
Orleans	Second Monday of every month	New Orleans.
Ouachita	First Thursday of every month	Monroe.
Sabine	First Wednesday of every month	
Second District	Third Thursday of every month	

THE PRESIDENT'S LETTER

Dear Members:

I thought that the Society might be interested in a report of the activities of the president, and his visits about the state.

On September 21, the Seventh District Society met at Lake Charles, to reorganize their Society, and there was a large crowd present. On the program were Dr. Ochsner, and two members of his staff, Drs. DeBakey and Echols, who presented a most interesting program. The president was called upon, and made a few feeble remarks, hardly being able to talk after such a banquet as was given us.

The next meeting was that of the Fourth District at Shreveport. Here again, a banquet was the order of the day, and most delicious fried chicken was served. Dr. Donovan C. Browne presented a paper on gastroenterology, and a physician from the Michael Reese Serum Center, Chicago, presented a paper on the various serums in use today; a most interesting paper. There is a great interest in the Fourth District in our Society, and the meeting was well attended. Again, a few remarks were made by the president.

Then followed a trip to the neighboring State of Arkansas, to read a paper on "Latent Scurvy" before the Fifth District (Arkansas) Society. Appearing on the program were Dr. Charles W. Mayo, of Rochester, Minn., and Dr. William Tibbetts, of Texarkana, Ark. In the morning of this day, the Council of the Arkansas Society met, and invited me to attend, together with Dr. Barrow, of Shreveport. At this meeting were Dr. Al Buchanan, President of the Arkansas State Medical Society, and Dr. L. H. Reeves, President of the Texas State Medical Society. The councilor of the district, Dr. R. B. Robins, had planned and executed a most interesting series of entertainments for all of us. In the evening, an open forum was held at the Municipal Auditorium, and all the guests speakers were again called on for short talks. I was given a card with the question sent in by someone in the audience: "Are you in favor of compulsory physical examinations before marriage? Please give the reasons for your answer." The answer was in the affirmative. There is no law in that state requiring pre-marital examinations. We are only 50 per cent better here, in that we only require that the male be examined.

A meeting of the Executive Committee was held on October 21, at which time the question of making plans under which the venereal disease control, with special emphasis placed on syphilis, was discussed, and Dr. Ford S. Williams, of the State Board of Health, and Dr. Heller, U. S. Public Health Service, appeared before the committee. There were some differences in the plan submitted by the Board of Health, and that of the Executive Committee, so a sub-committee from the Executive Committee was appointed to confer with Dr. Williams and his confrères; Dr. M. D. Hargrove, of Shreveport, is chairman of this committee.

I had almost overlooked the meeting of the Eighth District Society, probably due to the fact that this is held at home and I was not a visitor. Dr. Sanford, Professor of Medicine at the University of Tennessee, spoke on "Hypertension," one of the best presentations we have ever heard. Dr. Kepler, of Rochester, Minn., presented the subject of "Obesity," and said that the best way to overcome at least 90 per cent of the cases was "less eating and more work," a prescription that is simple, but often hard to get a fat man to follow. Dr. Donovan C. Browne had a fine paper on gastroenterology. A banquet that evening ended the day. The committee even made the president pay for his dinner, but exempted the guests. Is this fair, I ask you?

On November 21, the Farm Security Administration had a convention at Alexandria, and requested that I make a few remarks, which I did.

On December 4, the Louisiana Association of Public Health Workers began their convention at Shreveport, and asked that a few remarks be made by the president at the opening meeting, and later, at 8 p. m., an address on "Maternal Welfare" at the open meeting, held at Byrd High School Auditorium. I survived the double ordeal, and had a pleasant time in between. Dr. Barrow, of Shreveport, was kind enough to entertain us,

together with Dr. J. T. Nix, of New Orleans, at a luncheon at the Washington-Youree Hotel, and had several of the Shreveport doctors to be with us.

Monroe entertained the Fifth District Society on December 5, having Dr. Thomas, of the L. S. U. Medical Center, Dr. Cook, of the Mayo Clinic, on the program. Dr. John B. Elliott, Jr., of New Orleans, made a most interesting and entertaining talk, telling about his experiences as a student, physician, teacher, and Army doctor, in a way that was both instructive and inspiring to all who heard him. Dr. J. Q. Graves, President of the Fourth District Society, presided. There was another banquet, and again, the president was called upon for a few remarks.

The program for the coming annual meeting is being rapidly filled, and it is my suggestion to anyone who might desire to appear on the program, to contact the chairman of the Section he is interested in without delay, for already three-fourths of the program has been filled.

Wishing the Editor, his staff, and every member of the Louisiana State Medical Society a Merry Christmas and a Happy New Year.

Sincerely yours,

D. B. Barber, M. D.,
President.

BI-PARISH MEDICAL SOCIETY

A regular meeting of the society was held at the Rist Hotel on Wednesday, December 6, 1939, with the following members and their wives and guests present: Drs. and Mesdames C. S. Miller, A. D. Long, T. H. Pargen, E. M. Toler, S. L. Shaw, E. M. Robards, J. C. McMahon; Drs. N. F. Stafford and C. S. Toler; Mrs. J. O. Webb and Rev. and Mrs. Fulkerson.

After a delightful dinner, the business session was called at which officers were elected for the ensuing year: Dr. C. S. Miller, Jackson, president; Dr. A. D. Long, Jackson, vice-president; Dr. E. M. Toler, Clinton, secretary-treasurer; Dr. N. F. Stafford, Jackson, delegate; Dr. C. S. Toler, Clinton, alternate.

The next meeting will be held the first Wednesday in March, 1940, at the East Louisiana State Hospital at Jackson.

E. M. Toler, M. D., Sec.

DESOTO PARISH MEDICAL SOCIETY

A combined business and social meeting of the society was held at the Mansfield Sanitarium at 7 p. m. on December 12. After a delightful turkey dinner, served by the sanitarium, the business session took place, at which the following officers were elected for 1940: Dr. W. B. Hewitt, Mansfield, president; Dr. R. P. Thaxton, Mansfield, vice-president; Dr. R. A. Tharp, Mansfield, secretary-treasurer and delegate; Dr. W. G. Jones, Manfield, alternate.

R. A. Tharp, M. D., Sec.

OUACHITA PARISH MEDICAL SOCIETY

The annual banquet of the Ouachita Parish Medical Society was held at the Virginia Hotel at 7 p. m. on December 14, with 33 members present. Business session followed.

Applications for membership from Dr. W. L. Smith and Dr. R. H. Frost were read and referred to the Membership Committee.

Dr. Pracher, retiring president, thanked the membership for their support during term of office. The financial report for the year was read and accepted.

Officers were elected for the ensuing year: Dr. D. T. Milam, Monroe, president; Dr. H. E. Guerriero, Monroe, vice-president; Dr. L. L. Titche, Monroe, secretary-treasurer; Dr. John Snelling, Monroe, delegate; Dr. M. W. Hunter, Monroe, alternate.

L. L. Titche, M. D., Sec.

THIRD DISTRICT MEDICAL SOCIETY

A regular quarterly meeting of the society was held at Deare's Tavern, New Iberia, on Thursday, December 7, 1939, at 7 p. m.

The scientific program consisted of two presentations: "Present Day Methods of Diagnosing Tumors of the Breast" by Dr. L. J. Menville, of New Orleans; "Differentiating Depressive Reactions from Somatic Diseases" by Dr. C. S. Holbrook, of New Orleans.

Officers were elected for 1940: Dr. R. S. Hernandez, Duson, president; Dr. L. M. Villien, Jeanerette, vice-president; Dr. J. J. Burdin, Lafayette, secretary-treasurer; Dr. O. E. Dalton, New Iberia, delegate; Dr. W. J. Yongue, Lafayette, alternate.

COMPONENT SOCIETY OFFICERS
1940

Avoyelles Parish

President: Dr. Philip Jeansonne, Plaucheville.
Vice-President: Dr. L. A. Morrogh, Marksville.
Secretary-Treasurer: Dr. K. A. Roy, Mansura.
Delegate: Dr. K. A. Roy, Mansura.
Alternate: Dr. A. M. Abramson, Marksville.

Iberia Parish

President: Dr. J. N. Pharr, New Iberia.
Vice-President: Dr. E. T. Duncan, Weeks Island.
Secretary-Treasurer: Dr. C. L. Mengis, New Iberia.
Delegate: Dr. W. P. D. Tilly, New Iberia.
Alternate: Dr. Leon Slipakoff, New Iberia.

Plaquemines Parish

President: Dr. B. H. Carlton, Port Sulphur.
Vice-President: Dr. C. M. Johnson, Buras.
Secretary-Treasurer: Dr. J. T. Reeves, Buras.

RAPIDES PARISH

President: Dr. N. T. Simmonds, Alexandria.
First Vice-President: Dr. J. A. White, Jr., Alexandria.
Second Vice-President: Dr. C. P. Herrington, Alexandria.
Secretary-Treasurer: Dr. E. G. Cailleteau, Alexandria.
Delegates: Drs. H. O. Barker, M. H. Foster, A. L. Culpepper; all of Alexandria.

RED RIVER PARISH

President: Dr. W. W. Gahagan, Coushatta.
Vice-President: Dr. L. S. Huckabay, Harmon.
Secretary-Treasurer: Dr. F. E. DePriest, Coushatta.
Delegate: Dr. L. S. Huckabay, Harmon.
Alternate: Dr. F. E. DePriest, Coushatta.

SABINE PARISH

President: Dr. S. F. Fraser, Many.
Vice-President: Dr. O. L. Sanders, Converse.
Secretary-Treasurer: Dr. G. F. Weber, Many.
Delegate: Dr. L. H. Murdock, Zwolle.

TERREBONNE PARISH

President: Dr. S. E. Ellender, Houma.
Vice-President: Dr. S. C. Collins, Houma.
Secretary-Treasurer: Dr. W. A. Ellender, Houma.
Delegate: Dr. T. I. St. Martin, Houma.

WEBSTER PARISH

President: Dr. S. J. Feducia, Cotton Valley.
Vice-President: Dr. Byron L. Cook, Minden.
Secretary-Treasurer: Dr. B. A. Norman, Minden.
Delegate: Dr. W. C. Summer, Minden.
Alternate: Dr. John Pugh, Cotton Valley.

FOURTH DISTRICT

President: Dr. C. R. Gowen, Shreveport.
Vice-President: Dr. W. H. Browning, Shreveport.
Secretary: Dr. N. J. Bender, Shreveport.

COLLEGE OF SURGEONS

A Sectional Meeting of the American College of Surgeons will be held in New Orleans, Louisiana, with headquarters at the Roosevelt Hotel, on January 17-19, 1940. The following states will participate: Louisiana, Mississippi, Alabama, Georgia, Florida, Tennessee, Kentucky, Missouri, Arkansas, Texas, Kansas, Oklahoma.

The Committee on Local Arrangements, which is making plans for an exceptionally interesting meeting, has for its officers: Dr. Mims Gage, Chairman; Dr. Ambrose H. Storck, Secretary.

A general outline of the program follows:

Wednesday, January 17

7:30-10:00	Registration and general information.
8:00-11:00	Operative and non-operative clinics; general surgery and the surgical specialties.
10:00-12:30	Hospital conference.
11:30-12:30	Midday panel discussions: Craniocerebral injuries; abnormal uterine bleeding; delayed union and non-union of fractures; sinusitis.
1:00- 2:00	Medical motion pictures, general surgery.
2:00- 4:00	Afternoon panel discussions: Prevention of postoperative pulmonary complications; intestinal obstruction; stomach surgery.
2:00- 5:00	Hospital conference.
2:00- 5:00	Medical motion pictures, eye, ear, nose, and throat surgery.
4:00- 5:00	Medical motion pictures, general surgery.
5:00- 5:30	Meeting of Fellows.
5:30- 6:00	Meetings of State Executive, State Credentials, and State Judiciary Committees.
7:00- 8:00	Medical motion pictures, general surgery.
7:30-10:00	Medical motion pictures, eye, ear, nose, and throat surgery.
8:00-10:00	Scientific meeting, general surgery.
8:00-10:00	Hospital conference.

Thursday, January 18

7:30-10:00	Registration and general information.
8:00-11:00	Operative and non-operative clinics; general surgery and the surgical specialties.
10:00-12:30	Hospital conference.
11:30-12.30	Midday panel discussions: Cancer therapies; varicose veins; pre- and postoperative drugs used in gastro-intestinal surgery; glaucoma.
12:30- 2:00	Luncheon, Governors of the College.
1:00- 2:00	Medical motion pictures; general surgery and eye, ear, nose and throat surgery.
2:00- 4:00	Afternoon panel discussions: Biliary tract surgery and the bad risk case; treatment of infections of the genito-urinary tract; carcinoma of the colon.
2:00- 4:00	Scientific meeting, eye surgery.
2:00- 4:00	Scientific meeting, ear, nose and throat surgery.
2:00- 4:00	Hospital conference.
4:00- 6:00	Conference on Graduate Training for Surgery.
4:00- 6:00	Medical motion pictures; general surgery and eye, ear, nose and throat surgery.
6:30- 8:00	Dinner.
8:00-10:00	Scientific meeting, general surgery.
8:00-10:00	Scientific meeting, eye surgery.
8:00-10:00	Scientific meeting, ear, nose and throat surgery.
8:00-10:00	Motion pictures for hospital personnel.

Friday, January 19

7:30-10:00	Registration and general information.
8:00-11:00	Operative and non-operative clinics, eye, ear, nose and throat surgery.
9:00-11:00	Fracture clinic.
9:00-11:00	Cancer clinic.
10:00-12:30	Hospital conference.
11:00-12:00	Conference of Regional Fracture Committees.
12:00- 1:00	Midday panel discussions: Appendicitis; immediate repair of cutaneous defects; thyroid surgery.
1:00- 2:00	Medical motion pictures; general surgery and eye, ear, nose and throat surgery.
2:00- 4:00	Group clinical conferences: Orthopedics, urology, obstetrics and gynecology, ophthalmology, otorhinolaryngology, thoracic surgery, neurological surgery, cancer clinic (a demonstration).
2:00- 4:30	Hospital conference—Study Tour of Charity Hospital.
4:00- 6:00	Medical motion pictures; general surgery and eye, ear, nose and throat surgery.
7:00-10:00	Medical motion pictures, general surgery.
8:00-10:00	Meeting on Health Conservation.

A number of distinguished visiting surgeons from various parts of the country will address the sessions. Among these will be: Dr. George P. Muller of Philadelphia, president of the American College of Surgeons; Dr. Frank E. Adair of New York, chairman of the Committee on Cancer of the College; Dr. Frederic A. Besley of Waukegan, secretary of the College; Dr. Arthur W. Allen of Boston, lecturer in surgery at Harvard University Medical School; Dr. Louis H. Clerf of Philadelphia, professor of laryngology and bronchoscopy, Jefferson Medical College of Philadelphia; Dr. Edward D. Churchill of Boston, John Homans professor of surgery, Harvard University Medical School; Dr. Claude C. Coleman of Richmond, clinical professor of neurological surgery, University of Virginia Department of Medicine; Dr. William J. Engel of Cleveland, surgeon, Cleveland Clinic Hospital; Dr. J. Deryl Hart of Durham, North Carolina, professor of surgery, Duke University School of Medicine; Dr. William H. Luedde of St. Louis, director, department of ophthalmology, St. Louis University School of Medicine; Dr. Michael L. Mason of Chicago, associate professor of surgery, Northwestern University Medical School; Dr. Carl H. McCaskey of Indianapolis, professor of otolaryngology, Indiana University School of Medicine; Dr. John O. McReynolds of Dallas, ophthalmic and aural surgeon, St. Paul's and Methodist hospitals, Scottish Rite Hospital for Crippled Children; Dr. Charles L. Scudder of Boston, consulting surgeon, Massachusetts General Hospital; and Dr. Malcolm T. MacEachern of Chicago, associate director, American College of Surgeons.

A feature of the meeting will be the dinner on Thursday evening, January 18, in honor of Dr. Rudolph Matas, of New Orleans, in his 80th year. This will be held in the Ballroom of the Roosevelt Hotel, with Fellows of the College and guests in attendance.

A great attraction for visitors will be the opportunity to inspect the new State of Louisiana Charity Hospital, which has 3,000 beds and costs $12,500,000. Adjacent to the hospital on one side is the Tulane University Medical School and on the other, the Louisiana State University Medical Center. The entire group is very convenient to the headquarters hotel. The facilities of these institutions, together with those of the other fine hospitals of New Orleans, will make an excellent setting for the series of operative and non-operative clinics in general surgery and the surgical specialties which will be held each day of the meeting.

Of special interest will be a series of Group Clinical Conferences, to be conducted by visiting surgeons, at the Charity Hospital on Friday afternoon, January 19. The subjects will be orthopedics, thoracic surgery, obstetrics and gynecology, urology, neurological surgery, ophthalmology, otolaryngology, and a cancer clinic.

In addition to the clinics and clinical demonstrations and conferences at the hospitals, scientific sessions, conferences, and panel discussions will be held at the headquarters hotel. Among the subjects to be discussed are cancer, fractures, thyroid surgery, varicose veins, intestinal obstruction, craniocerebral injuries, sinusitis, stomach surgery, prevention of postoperative pulmonary complications, and many more limited topics. Medical motion pictures will be shown daily. These will cover surgical technic and other aspects of general surgery, eye, ear, nose and throat surgery, and the other specialties.

A session of general interest will be the Conference on Graduate Training for Surgery on Thursday afternoon, January 18. At this session the program of the American College of Surgeons in graduate training for general surgery and the surgical specialties will be described, and a report made on the accomplishments to date. Talks on significant phases of the subject will also be presented, followed by general discussion.

The program for the Hospital Conference which will also be held during the three days of the Sectional Meeting will cover a wide variety of subjects of interest to hospital personnel, and will include a special program of medical motion pictures on hospital topics. On Friday afternoon a study tour of the Charity Hospital is scheduled.

Educational and scientific exhibits will be placed in the ballroom of the headquarters hotel. Daily

bulletins will be issued listing the various sessions, conferences, clinics, and other events of the day.

The meeting will close with a session open to the public on Conservation of Health. This meeting will be held in the ballroom of the hotel.

The medical profession at large, as well as hospital trustees, superintendents, nurses, and other hospital departmental personnel, will find a great deal to interest them at this meeting. Members of the State Medical Association are most cordially invited to attend. There will be no registration charge.

Louisiana State Executive Committee,
Secretary:
Mims Gage, M. D., New Orleans.
Counselors:
William L. Atkins, M. D., Shreveport,
James Q. Graves, M. D., Monroe,
Ambrose H. Storck, M. D., New Orleans.

MISSISSIPPI VALLEY MEDICAL SOCIETY

The sixth annual meeting of this organization will be held in Rock Island, Ill., September 25-27, 1940.

NEWS ITEMS

The National Conference on Medical Service will hold its fourteenth annual meeting at the Palmer House, Chicago, on February 11, 1940. The program includes symposia on group medical care and medical welfare programs. All state medical societies have been asked to send representatives to this conference.

The United States Chapter of the International College of Surgeons will hold its fourth annual assembly in Venice, Fla., February 11-14, 1940. Speakers well known in this country and in Brazil, Canada, Cuba, Mexico and Turkey will lecture.

The general oral and pathologic examinations (Part II) for all candidates (Groups A and B) will be conducted by the entire Board of Obstetrics and Gynecology meeting in Atlantic City, N. J., on June 8-11, 1940.

The eighth American Scientific Congress will be held in Washington, May 10-18, 1940, in conjunction with the fiftieth anniversary of the founding of the Pan-American Union. The Congress will be divided into sections of which number five will be of interest to the medical profession, namely, that having to do with public health and medicine.

Gifts of approximately $1,500,000 to Northwestern University and of approximately $1,000,000 to the University of Chicago are announced by the Trustees of the Estate of Clara A. Abbott, who died in 1924. Both gifts will be used for medical and chemical research.

Dr. Charles James Bloom addressed the Mothers' Club of the Holy Name of Jesus School on December 6, on the subject of "The Common Cold."

The Louisiana State Pediatric Society held a meeting at the Metairie Golf Club in New Orleans, October 26, 1939. A very interesting paper was presented by Dr. R. T. Lucas of Shreveport on "Convalescent Serum." The discussion of this paper was opened by Dr. George Hauser of New Orleans.

Wm. C. Rivenbark, M. D.,
Secretary.

REFRESHER COURSES IN OBSTETRICS

A cordial invitation is extended to all physicians of the Second, Third, Sixth, Seventh and other Districts to attend Refresher Courses in Obstetrics. These are being sponsored by the Louisiana State Medical Society and the Maternal and Child Health Division of the Bureau of Parish Health Administration, Louisiana State Board of Health. Lectures will be given as follows:

Reserve, La. — Home of Dr. Donaldson
Monday, January 8, 1940—7:00 p. m.
Monday, January 15, 1940—7:00 p. m.
Monday, January 22, 1940—7:00 p. m.
Monday, January 29, 1940—7:00 p. m.
Monday, February 12, 1940—7:00 p. m.

Hammond, La. — City Hall
Tuesday, January 9, 1940—7:00 p. m.
Tuesday, January 16, 1940—7:00 p. m.
Tuesday, January 23, 1940—7:00 p. m.
Tuesday, January 30, 1940—7:00 p. m.
Tuesday, February 13, 1940—7:00 p. m.

Donaldsonville, La. — Elks Club
Wednesday, January 10, 1940—7:00 p. m.
Wednesday, January 17, 1940—7:00 p. m.
Wednesday, January 24, 1940—7:00 p. m.
Wednesday, January 31, 1940—7:00 p. m.
Wednesday, February 14, 1940—7:00 p. m.

Lake Charles, La. — St. Patrick's Hospital
Thursday, January 11, 1940—7:00 p. m.
Thursday, January 18, 1940—7:00 p. m.
Thursday, January 25, 1940—7:00 p. m.
Thursday, February 1, 1940—7:00 p. m.
Thursday, February 15, 1940—7:00 p. m.

New Iberia, La. — City Hall
Friday, January 12, 1940—7:00 p. m.
Friday, January 19, 1940—7:00 p. m.
Friday, January 26, 1940—7:00 p. m.
Friday, February 2, 1940—7:00 p. m.
Friday, February 16, 1940—7:00 p. m.

OUTLINE OF LECTURES

1. Pre- and Postnatal Care
   Conduct of Normal Labor
   Analgesia and Anesthesia
   —Dr. T. B. Sellers.
2. Breech and Forceps Deliveries
   Transverse Presentations
   Prolapse of Cord
   —Dr. Joseph Reddoch.
3. Toxemia of Pregnancy
   —Dr. H. V. Sims.
4. Complications of Pregnancy
   Syphilis
   Heart Disease
   Tuberculosis
   Hookworm and Other Intestinal Parasites
   Pneumonia
   Malaria
   —Dr. E. L. King.
5. Hemorrhage and Infections
   —Dr. Peter Graffagnino.

The lectures will begin promptly at 7 o'clock and continue for approximately an hour and a half. Following each lecture there will be a round-table discussion. If you are doing any obstetrics in your practice it is felt that this course will be of considerable value to you.

Much effort has been put forth in planning this work so as to make it practical and of real value to every physician who attends.

EXTENSION COURSES

The Graduate School of Medicine of Louisiana State University presented four extension programs in Louisiana during the month of December. On Thursday, December 5, Dr. Ashton Thomas appeared before the Fifth District Medical Society with a talk on "Rhinologic and Otologic Problems of the General Practitioner." On Tuesday, December 12, a Symposium on Pneumococcal Lobar Pneumonia was given before the Terrebonne Parish Medical Society at which Dr. John R. Schenken spoke on the "Pathology and Pathogenesis of Pneumonia." Dr. Robert Bayley spoke on the "Diagnosis and Differential Diagnosis of Pneumonia" and Dr. J. O. Weilbaecher, Jr., spoke on "The Treatment of Pneumonia." On Wednesday, December 13, Dr. Daniel N. Silverman spoke on "Carcinoma of the Stomach" before the East Baton Rouge Parish Medical Society at Baton Rouge, Louisiana. On Friday, December 15, a Symposium on Skin Diseases was given before the Jefferson Davis Parish Medical Society at Jennings, Louisiana. The following doctors participated in the program: Dr. James K. Howles spoke on "Diagnosis of Mycotic Fungus Infections of the Skin and Their Treatment." Dr. James W. Tedder spoke on "The Ten Most Common Skin Diseases." Dr. Charles Barrett Kennedy spoke on "Common Vesicular Dermatoses of the Hands and Feet with Diagnosis and Treatment."

PROGRESS IN TREATMENT OF PNEUMONIA

In summarizing the great advances that have been made in the development of sulfonamide derivatives for the treatment of bacterial infections, Lord (New England J. Med., 221: 570, 1939) points out that reduction in the fatality rate of pneumonia from 25 per cent to 7 per cent has been brought about in a large group of adults treated with sulfapyridine. The combined use of sulfapyridine and antiserum will doubtless prove more effective than either alone.

It is desirable to begin treatment with sulfapyridine as soon as the diagnosis is established. If no sputum is available, examination may be made of material taken on a pharyngeal or laryngeal swab, and blood cultures should routinely be made at suitable intervals. In view of the possibility of toxic reactions, blood examinations should include hemoglobin, red cell, and white cell determinations and differential counts.

INFECTIOUS DISEASES IN LOUISIANA

For the week ending November 18, the forty-sixth week of the year, there were listed in the office of the state epidemiologist, Dr. J. A. O'Hara, 122 cases of syphillis, 46 of pneumonia, 31 of cancer and pulmonary tuberculosis, 14 of scarlet fever, 11 of gonorrhea and 10 of influenza. Two typhus fever cases were reported from Ouachita Parish. For the week which came to a close November 25, the following diseases were reported in numbers greater than ten: 72 cases of syphilis, 43 of whooping cough, 28 of cancer, 24 of pneumonia, 23 of pulmonary tuberculosis, 13 of diphtheria and 12 of scarlet fever. There were three other cases of typhus fever reported, one from Orleans and two from Ouachita Parish. For the next week, which closed December 2, there were listed in the weekly report 120 cases of syphilis, 61 of pulmonary tuberculosis, 39 of whooping cough, 35 of pneumonia, 31 of scarlet fever, 27 of typhoid fever, 22 of chickenpox, 21 of cancer, 18 of gonorrhea and 17 of diphtheria. Three cases of typhus fever were reported this week, originating in Calcasieu, Jefferson Davis and St. Mary parishes. The sharp increase in the incidence of typhoid fever is unexplainable. Orleans Parish reported 19 of these cases but six were imported; no other parish reported more than two. For the last week for which figures are available, namely, that which terminated December 9, syphilis, as usual, led all other diseases with a sharp increase over the preceding week with 230 cases listed; followed in order of frequency by these disorders: 40 cases of pneumonia, 36 of gonorrhea, 32 of cancer, 29 of whooping cough, 24 of pulmonary tuberculosis, 18 of scarlet fever, 11 of chickenpox. Six cases of typhus fever were discovered this week, one from Caddo, two from Calcasieu and three from Orleans parishes.

HEALTH OF NEW ORLEANS

The Department of Commerce, Bureau of the Census, reports that for the week ending November 11 there were 123 deaths in the City of New Orleans as contrasted with 137 the previous week. Broken down these figures show that there were 65 white and 58 negro and 13 infant deaths. There was a big jump in the death rate for the week of November 18, 172 deaths being listed, of which 111 were white and 61 negro. There were 21 infant deaths, the majority of which were among the negro babies. The death rate was still increased the week of November 25, 180 former citizens of New Orleans expiring this week, 100 of whom were white and 80 negro. This large number of deaths was not accompanied by a proportionate infant mortality as only nine infants died this particular week. One hundred and sixty deaths were listed for the week which closed December 2. This week the relatively large number of deaths may be attributed in part to a high infant mortality as 24 infants expired in this period of time. The ratio between the two races was as two is to one. There was a slight diminution in the number of deaths for the week which finished December 9, 95 white people and 56 negro succumbing for the total of 151 deaths, 10 of which were in infants.

CORRESPONDENCE

United States Department of Agriculture
Farm Security Administration
Donaghey Trust Building
Little Rock, Arkansas

Dr. P. T. Talbot, Secretary
Louisiana State Medical Society
New Orleans, Louisiana

Dear Dr. Talbot:

There is enclosed for your information and files, a report on the operation of the group medical services projects in Louisiana, from date of beginning to October 1, 1939. These figures are taken from records in the various parish offices which are available to all members of parish or state medical societies for inspection.

We have met with some other medical societies to discuss possibilities of setting up funds for payment of physicians' bills in this manner. Tentative agreements have been worked out in a number of additional parishes, based strictly in conformity to the policy approved by your Council in October, 1938.

You will note that the "contract" plan in Pointe Coupee Parish is being changed, with the unanimous consent of the members of the parish medical society, to conform to the regular policy agreed upon by the Council.

A complete list of all new contacts will be furnished you in the near future.

It has been our happy privilege to confer with Dr. Barber, President of the Louisiana State Medical Society. He accepted an invitation to address the Louisiana State Conference of about three hundred Farm Security Administration workers, in Alexandria, recently. Our personnel was delighted and inspired by his able and sympathetic discussion of "The Tenant Farmer as Viewed by the Physician."

The Farm Security Administration is indeed appreciative of your kind offices and for the sincere consideration and helpful assistance being given by the organized medical profession, generally, throughout the state, in trying to provide medical care for these low income farm families at a cost they can afford to pay.

Yours sincerely,
Steele T. Kennedy,
Health Specialist.

Enclosure.

PERCENTAGE OF MEDICAL BILLS PAID IN THE VARIOUS GROUP MEDICAL CARE PARISHES IN LOUISIANA

Webster Parish: 7 months' operation, March 1, to October 1. Average loan per family for one year $12.04. Percentage of all bills paid to October—78.5 per cent.

Lafayette Parish: Average loan per family $15.00 Percentage paid, 6 months, April 1 to October 1—100 per cent.

Natchitoches Parish: 4 months' operation, June 1 to October 1. Average loan per family $15.00. Percentage of all bills paid during period of operation—71 per cent.

St. Martin Parish: 4 months' operation, June 1 to October 1. Average loan per family $15.00. Percentage of all bills paid to date—57 per cent.

Madison Parish: 7 months' operation, March 1 to October 1. Average loan per family $17.00 plus. All prescribed drugs included, with understanding that all drug bills be paid 100 per cent and the remaining amount each month prorated on physicians' bills. Total percentage of all bills paid by months: March, 51 per cent; April, 30 per cent; May, 37 per cent; June, 59 per cent; July, 59 per cent; August, 52 per cent; September, 72 per cent.

Avoyelles Parish: Average loan per family $17.00 plus. All prescribed drugs included. Payments are made every four months. First and only payment covering the period from April 1 to August 1, was 69 per cent plus, of all bills submitted.

St. Helena Parish: Rate of loans: average $17.00 per family. Maximum $20.00. Services include physical examination, physicians' services and prescribed drugs. Has operated 3 months, July, August and September. Paid 78 per cent of all bills.

Pointe Coupee Parish: Individual contract plan, with 1 physician and 250 families participating. All drugs included. Annual cost per family $21.00 to $27.00. This will be charged to the pool plan after January 1, with perhaps 400 or more families participating.

AMEDEE B. GRANGER
(1879-1939)

The many friends of Dr. Amédée Granger were shocked to hear of his sudden death on December 15 as a result of coronary thrombosis. Dr. Granger was a native of New Orleans and descendant of an old French family. He had been head of the Department of Radiology at Charity Hospital since 1905 and recently had become full-time head of this important division of the institution. He was a member of the faculty of Louisiana State University. For his splendid studies in perfecting the technic of various roentgenologic examinations Dr. Granger had received many honors, including the Legion d'Honneur. He was a former president of the Orleans Parish Medical Society, first vice-president of the Radiological Society of North America and held other elective offices in organized medicine and in numerous societies of his specialty.

JOSEPH N. ROUSSEL
(1871-1939)

One of the most prominent dermatologists of the city died suddenly December 15 at the age of 68. His death was attributed to coronary occlusion. Dr. Roussel, a native of Louisiana, graduated from Tulane in 1896. In 1903 he was appointed dermatologist of Touro Infirmary, a position which he held for many years. He had been also senior Visiting Physician at Charity Hospital, Dermatology Division. In 1931 he was appointed Professor and Head of the Department of Dermatology at Louisiana State University, becoming Professor Emeritus in 1937. A man of great popularity, Dr. Roussel was interested in various civic activities. His loss will be felt keenly by his innumerable friends and patients.

DAVID L. WATSON
(1868-1939)

Dr. Watson died on December 18 at the age of 71 as a result of a fall down the stairs at his residence. He was one of the best known of the older practitioners of the city. He had a large practice and was active up until the past few years in the Orleans Parish Medical Society.

WOMAN'S AUXILIARY
Louisiana State Medical Society

President—Mrs. S. M. Blackshear, New Orleans.

President-elect—Mrs. Roy Carl Young, Covington.

First Vice-President—Mrs. H. O. Barker, Alexandria.

Second Vice-President—Mrs. C. U. Johnson, Monroe.

Third Vice-President—Mrs. W. P. Bordelon, Lake Charles.

Fourth Vice-President—Mrs. T. E. Strain, Shreveport.

Treasurer—Mrs. W. R. Buffington, New Orleans.

Recording Secretary—Mrs. E. C. Melton, Plaquemine.

Corresponding Secretary—Mrs. C. R. Hume, New Orleans.

Parliamentarian—Mrs. A. A. Herold, Shreveport.

Historian—Mrs. Joseph Bath, Natchitoches.

New Orleans, Louisiana,
December, 1939.

Dear Auxiliary President:

A letter to Dr. P. T. Talbot, Secretary of the Louisiana State Medical Society, from Dr. Olin West, Secretary of the A. M. A., was received, and Dr. J. H. Musser, Chairman of our Advisory Council, asked that we take some action regarding it.

Information has come to the office of the A. M. A., to the effect that the American Federation of Women's Clubs is attempting to secure approval of the Wagner Bill, or of some similar measure, by as many as possible of all of the women's organizations affiliated with the Federation; and that a second White House Conference, such as was held in Washington several months ago, has been or will be immediately called to meet in Washington in January, probably about the eighteenth or twentieth, for the purpose of bringing concerted effort to bear on Congress, when they meet early in 1940, for the enactment of the Wagner Bill or some similar legislation.

If, after taking this up with the president of your local medical society, he deems it appropriate and advisable, it is our suggestion that at your very next meeting you obtain a doctor who is well qualified as an interesting speaker, with especial knowledge of this subject, to give an address on "Why the Medical Profession is Opposed to the Wagner Bill and Similar Legislation"; and that you invite to the meeting the president or a representative of each woman's club in your community which is a member, or affiliated with, the American Federation of Women's Clubs.

Please give this your immediate and serious attention.

Sincerely yours,
Mrs. S. M. Blackshear, President,
Woman's Auxiliary to the Louisiana
State Medical Society.

PARISH AUXILIARY NEWS

CADDO

The Caddo Parish Auxiliary is carrying on an interesting and successful year under the leadership of Mrs. Clifford P. Rutledge. With a well organized program of activities the Auxiliary is progressing with the following projects:

(1) Every member a qualified voter; (2) The Pines Preventorium; (3) more subscriptions to Hygeia; (4) observation of Doctors' Day; (5) gifts to the Indigent Physicians' Fund.

An important annual event was the Christmas dinner party on December 13, in Shreveport, when the Auxiliary entertained the members of the medical society. During the evening the hundred or more guests were entertained by the singing of Christmas carols, the words being shown on a screen; with other amusements which followed, it was a delightful affair.

Mrs. N. Judson Bender,
Publicity Chairman.

OUACHITA

The members of Ouachita Parish Auxiliary, of which Mrs. Courtland P. Gray is president, are active this year with several needed and successful projects. Among these are the purchase of magazines for the new Cooley Tuberculosis Sanatorium and the annual sale of Christmas seals. This group is also trying to place Hygeia in every doctors's office.

Following the custom of other years, the Auxiliary entertained the Ouachita Parish Medical Society at a Christmas supper party, which took the place of the regular meeting.

Mrs. J. W. Cummins,
Publicity Chairman.

NOTES ON THE SOUTHERN MEDICAL MEETING

The sixteenth annual meeting of the Woman's Auxiliary to the Southern Medical Association met in Memphis, November 21-23, 1939, at the Peabody Hotel, with Wrs. W. K. West, president, presiding in a most efficient and charming manner. An address of welcome was given by Mrs. Willis C. Campbell, of Memphis, and responded to by Mrs. Harry V. Thomas of Clarksburg, West Virginia. Greetings were extended by the presidents of the county and state auxiliaries, by the Woman's Auxiliary to the American Medical Association through Mrs. Rollo K. Packard, president, and by the Advisory Council of the Southern Medical Association: Dr. Walter E. Vest, president; Dr. Edgar G. Ballenger, chairman of council; Mr. C. P. Loranz, secretary-manager; and by Dr. Arthur T. McCormack, president-elect, who addressed the Auxiliary with his usual ability to say pretty things to the ladies, and about them.

A report from Mrs. S. A. Collom, Sr., of Texarkana, Texas, was read by one of the alternates, as she was not present. Mrs. Collom has been doing work on research and invites all county auxiliaries to call upon her whenever they need material for programs, or information concerning the Auxiliary and its work. She will lend the material to those desiring it.

Mrs. Luther Bach of Bellevue, Kentucky, Chairman of the Jane Todd Crawford Committee, told of the success the project is having and urged all states to contribute as the Southern Medical Auxiliary is sponsoring this work. She urged all states who have not signified how they want the fund used please to get this information to her at once. Small miniature reproductions of the home of Jane Todd Crawford and literature on this subject were given out to each state president or her representative to be taken back home to be exhibited at the next state conventions.

Mrs. Harvey F. Garrison of Jackson, Mississippi, read the budget which has been limited by the Association to $200. It delighted us all to see how far these Southern women can make this small amount of money go. The amount is allocated to the Auxiliary by the Southern Medical Association yearly, and all Southern Medical dues have been abolished. In this way the wife of each member of the Southern Medical Association is automatically a member of the Auxiliary and is welcome as such at all times.

Mrs. August A. Werner of St. Louis, Missouri, read a report on resolutions.

Mrs. Stephen C. McCoy of Louisville, Kentucky, gave a report of the records of which she is custodian. She invited all members who attend the meeting there next year, to get in touch with her if they are interested and she will gladly show them these records. They are in a fireproof box in one of the public buildings in Louisville.

Mrs. Arthur A. Herold of Shreveport, Louisiana, read a paper on "Pending Legislation of Interest to the Medical Profession." This was truly one of the outstanding numbers on the program and is such a splendid article that it should be printed where it can be reached by every member of the Auxiliary.

A very beautiful memorial ceremony was conducted by Mrs. Eustace A. Allen of Atlanta, Georgia. As the names of the deceased members were called, candles were lighted and burned throughout the touching tribute paid to those who have departed from this life.

The annual luncheon of the Auxiliary followed the morning session and was attended by three or four hundred women. Mrs. W. K. West presided, and delighted all with her spontaneous wit and gracious manner. The past presidents and state presidents were introduced. Then the "Parade of States" followed. Each state was represented by a speaker who for two minutes gave some outstanding contribution which had been made by her state to our Country, medical or otherwise. This was very enlightening and enjoyable. Many of the women were real press agents and made some of us quite envious of the states they represented.

Mrs. Rollo K. Packard gave a brief address and was responded to by Mrs. Charles P. Corn.

The usual Southern hospitality was extended by the Memphis women. They were on the job at all times taking the women to teas, dinners, sight-seeing drives, and making their stay one that will always be remembered as a high-light to add to the many happy reunions enjoyed with the very genial Southern Medical Auxiliary.

Mrs. Wiley R. Buffington,
New Orleans, Councilor for Louisiana.

Mrs. Edgar Burns,
Press and Publicity Chairman.

BOOK REVIEWS

Proctology for the General Practitioner: By Frederic C. Smith, M. D., M. Sc. (Med.), F. A. P. S. Philadelphia, F. A. Davis Company, 1939. Pp. 386. Price $4.50.

This book is a general treatise which includes many broad statements directed to the general practitioner. There are so many other volumes that are of value to the student and specialist that it is considered safe to relegate this edition to the general practitioner for whom it was written.

WARREN H. HEBERT, M. D.

Otolaryngology in General Practice: By Lyman G. Richards, M. D. New York, The Macmillan Co., 1939. Pp. 352. Price $6.00.

The essentials of otolaryngology are clearly and concisely presented and the style is adapted to easy reading. The text is concerned with the rudiments of otolaryngology and with the problems which the general man must face in his daily work. The aim of this book is to aid in arriving at a correct diagnosis and in the simpler cases the treatment is outlined. If the condition is beyond the scope of the general practitioner he is urged to refer the case to a competent otolaryngologist. The chapters on respiratory obstruction and hoarseness are particularly good.

This is a good book for a quick reference for the general practitioner.

F. E. LEJEUNE, M. D.

The Rectum and Colon: By E. Parker Hayden, A. B., M. D., F. A. C. S. Philadelphia, Lea and Febiger, 1939. Pp. 434. Price $5.50.

The author has discussed the general subject of diseases of the rectum and colon without including unnecessary and unimportant details. Each pathologic condition has been emphasized in proportion to its relative frequency and importance. The various opinions expressed are based largely on the author's personal experience, augmented by a number of his colleagues at the Massachusetts General Hospital. No attempt has been made to include a complete bibliography.

The subject matter has been discussed in scholarly manner and there are certain chapters worthy of comment. The chapter with reference to pruritus ani is rather clear and concise although more attention should have been directed towards cleanliness and personal hygiene as important factors in etiology. He is of the opinion that there is no rectal or anal pathology in many of these cases. Such a statement is rather misleading unless it is further clarified.

Again, it is interesting to note the opinion of a surgeon with reference to the injection treatment of hemorrhoids. Here is the statement made by an individual qualified to carry out that form of treatment best adopted to the individual case: "To anyone who has had experience with both methods of treatment, it is obvious that each possesses advantages and disadvantages and that one should employ that form of therapy, which is best suited to the individual patient."

Very little discussion has been given to the colon and the important subject of cancer. Perhaps the book could have been titled, "The Rectum and Anus" instead of "The Rectum and Colon." This volume should be of value to the student or graduate, who is interested in this extremely important field of medicine.

WARREN H. HEBERT, M. D.

Cancer of the Colon and Rectum; Its Diagnosis and Treatment: By Fred W. Rankin, B. A., M. A., M. D., Sc. D., F. A. C. S., and A. Stephen Graham, M. D., M. S. (in Surgery), F. A. C. S. Springfield, Ill., Charles C. Thomas, 1939. Pp. 358. Price $5.50.

All physicians interested in cancer of the colon should feel indebted to these authors for their most recent publication. They need no introduction as their past contributions speak for themselves. This volume is largely made up from the personal experience of the authors, but they have incorporated the views and experiences of other well-known surgeons from the British school of surgery.

The text is well written and illustrated and there are no omissions. Statistics and other data have been clearly stated as a reliable and accurate presentation of facts. A rather large, complete bibliography is included for those interested in reference work.

It is interesting to note the authors' view towards the routine use of intra-peritoneal vaccine. Suffice it is to say, in their experiences and with the methods used in their service, they were forced to conclude that intra-peritoneal vaccination is not the important factor in the reduction of mortality following colonic surgery. The present evidence

seems to indicate that decompression, hydration, and general rehabilitory measures are the most potent factors in increasing the resistance to intraperitoneal infection.

Again, they have found inhalation anesthesia to increase the margin of safety and for this reason they have discontinued the use of spinal anesthesia.

Anyone interested in carcinoma of the larger bowel and rectum should welcome this volume. It is worthy of the highest praise and commendation. It represents the views of two men who have had a great deal of personal experience in this field of surgery.

WARREN H. HEBERT, M. D.

John Howard (1726-90), Hospital and Prison Reformer: A Bibliography: By Leona Baumgartner, M. D., Ph. D. Baltimore, Johns Hopkins Press, 1939. Por.; pp 79. Price $1.00.

This is another in the fine group of reprints from the Bulletin of the History of Medicine issued by the Johns Hopkins Press. It is written in the "tradition of humanized bibliography" of Keyes, Fulton and Osler, and each item is fully and interestingly annotated. The volume will have a special appeal to those who are interested in "the history that good bibliography makes."

B. BERNARD WEINSTEIN, M. D.

Surgical Applied Anatomy: By Sir Frederick Treves. Philadelphia, Lea & Febiger, 1939. Pp. 748. Price $4.50.

This tenth edition of a new, well established classic is thoroughly revised and brought up to date. Clear, concise and well written, this small volume contains a useful and ably organized summary of the facts of applied anatomy, and numerous useful comments on surgical hazards to be avoided. It may be recommended as a valuable and useful book.

B. BERNARD WEINSTEIN, M. D.

Endocrinology in Modern Practice: By William Wolf, M. D., M. S., Ph. D. Philadelphia, W. B. Saunders Co., 1939. Pp. 1077. Price $10.00.

Those who have had occasion to employ the former (first) edition of Wolf's work, either as a reference volume or as a handbook, will be equally, if not more, delighted with the present one.

Dr. Wolf has encompassed an enormous amount of information within a relatively few pages. He has systematized his material exactly as before, but at the same time has made substantial additions in accordance with modern progress. The diagnostic tables and summaries at the end of each section, which characterized the preceding edition, have been retained and of course represent a valuable and exceedingly helpful method of presentation.

It is unnecessary to go into a detailed description of the thirty-three sections. They are to all intents and purposes the same as before with, of course, additions and elaborations, and should be well-known to all who are familiar with the first edition. It will suffice to say that the clear, lucid and eminently reliable style of the author has been maintained and there is but little tiresome, irrelevant verbiage to exhaust the interest of the reader.

Adverse criticism might well be advanced that the scope of endocrinology is too vast for the capacity of any single authority. It might be claimed that implications are not always adequately substantiated, experience and observation not invariably concordant with hypothesis, that endocrinology is too embryonic to warrant sweeping conclusions in many instances. This may be, and doubtless is, true, but the fact remains that conclusions from the wrong premises, may often be of as much service as conclusions from well authenticated premises, if for no other reason than the inspiration to thought, which they contribute. However much in error Wolf may occasionally be considered, it cannot honestly be denied that he has made an heroic attempt to gather, digest and correlate an enormous amount of data. In this sense, Wolf has contributed a real and enduring service to endocrinology, because he helps those who try to help others.

L. C. SCOTT, M. D.

Peripheral Vascular Disease: Diagnosis and Treatment: By William S. Collens, B. S., M. D., and Nathan D. Wilensky, M. D. Springfield, Ill., Charles C. Thomas, 1939. Pp. 244. Price $4.50.

The monograph is a good resumé of peripheral vascular disease. The chapter on methods of examination is particularly well done and would be of value to anyone treating peripheral vascular lesions. Of particular value are the chapters dealing with the conservative treatment of peripheral vascular disease. A whole chapter, as might be expected, is devoted to intermittent venous occlusion therapy, which has been popularized by the authors. This is exceptionally well done and is a real contribution. Whereas the surgical methods of therapy are briefly discussed, it is to be regretted that a better evaluation of the various methods of surgical therapy are not given. Vein ligation, artery ligation, and arteriectomy are considered as completely as sympathetic ganglionectomy and ramisectomy without a complete evaluation of the various methods. A valuable part of the book is the complete bibliography which follows each chapter. Although the monograph deals almost exclusively with peripheral arterial disease, the final chapter of the book is on the treatment of varicose ulcers, and one has the impression that this was appended more or less as an afterthought. Without a more adequate dis-

cussion of the underlying varicosities this seems quite superfluous.

As a whole, the book is an excellent summary of peripheral arterial disease and, because of its compactness, would be of value to every practitioner of medicine.

ALTON OCHSNER, M. D.

Manual of Urology: By R. M. LeComte, M. D. Baltimore, The Williams & Wilkins Co., 1939. Pp. 295; illus. Price $4.00.

Careful perusal of the preface to the first edition of this book will describe fully its content, which is " . . . briefly the fundamentals of urology in such a way that they can be easily grasped by the student approaching the subject." The author has diligently adhered to his expressed purpose.

The book is aptly entitled "A Manual Of Urology." It is essentially a handbook, and one splendidly adapted to the needs of the medical student during his clinical years.

IRVING J. GLASSBERG, M. D.

Operative Orthopedics: By Willis C. Campbell, M. D. St. Louis, C. V. Mosby Company, 1939. Pp. 1154; illus. Price $12.00.

"Operative Orthopedics" is a carefully prepared and comprehensive survey of most of the operative procedures in general use in the practice of orthopedics. Coming from a man of Campbell's ripe experience, in the course of which each operation described has been employed many times and with known results, this volume is most welcome to orthopedic surgeons.

The work represents much more than a simple description of operative technics and approaches. Beginning with a fundamental chapter on the physiology and pathology of bones, joints and related structures and followed by a chapter on the apparatus in common use in the treatment and postoperative care of orthopedic conditions, the author then reviews the special surgical technic and approaches necessary for the performance of the many plastic and reconstructive procedures in common use. He follows with a number of chapters dealing with operative corrections generally recommended for orthopedic conditions in each region throughout the body. Each section is accompanied by a valuable bibliography. The illustrations are well planned and executed and give the reader a clear conception of the operative steps.

This book will be a valuable addition to the library of any one interested in traumatic or reconstructive surgery and is essential as a reference book for students and practitioners of orthopedic surgery.

GUY A. CALDWELL, M. D.

Clinical Biochemistry: By Abraham Cantarow, M. D., and Max Trumper, Ph. D. Philadelphia, W. B. Saunders Co., 1939. Pp. 666. Price $6.00.

The second edition of this book contains 666 pages, and is supplied with bibliographies at the end of chapters, something that was intentionally omitted in the first edition.

New chapters or sections have been included, dealing with the influence of the anterior hypophysis, adrenal cortex and vitamin B_1 on carbohydrate metabolism; serum phosphatase activity; uremia; water balance, edema and dehydration; iodine metabolism; sodium and potassium metabolism; iron metabolism; magnesium metabolism; the chemistry of bile; and practical aspects of vitamin deficiencies.

The essential aim of the book is to present the fundamental principles of biochemistry as related to clinical medicine, and laboratory data are correlated with the clinical findings. There is a good index.

SIDNEY BLISS, Ph. D.

Bacteria; the Smallest of Living Organisms: By Dr. Ferdinand Cohn (1872). Baltimore, Johns Hopkins Press, 1939. Pp. 44. Price $1.00.

Cohn's classic paper is still important today because, as the present editor remarks in his preface, he "like nobody before or after him has so brilliantly and clearly indicated the position of bacteria in the general economy of nature." The essay is not antiquated in essentials and is now as well worth reading as when first published in 1872. The foundation of the systematic bacteriology of today is partly Cohn's classification of plant microorganisms according to their form: cocci, bacteria, bacilli, vibrios, spirilla, and spirochetes. His experimental observations which led to his discovery of spores are among the most important in the field of plant physiology.

The science of bacteriology was two hundred years old when Koch published his classical work on anthrax, and Cohn's essay on the "Bacteria" is a masterly, even though brief, outline of the progress made from the day when Leeuwenhoek first saw his "little animals" up to 1872.

There is an interesting note concerning Charles S. Dolley who, while yet a medical student, published in 1881 a translation of Cohn's paper,—one of the earliest translations of foreign work in this country on the subject of bacteriology.

There is appended a bibliography of Cohn's papers indicating the amount of work he accomplished. This should be of interest to medical historians.

In the Journal of the American Medical Association (113:1815, 1939) is an interesting editorial concerning this little book and the influence of Cohn in the medical world.

J. F. RYAN, M. D.

Principles of Hematology: By Russell L. Haden, M. A., M. D. Philadelphia, Lea & Febiger, 1939. Pp. 348. Price $4.50.

The reviewer can make no pretense to an authoritative discussion of a book concerning hematology. The approach is that of an internist who has long felt the necessity of a book devoted to the task of simplifying a subject that has grown very much involved. It is my opinion that in this the author has been eminently successful.

The first chapters of the book are concerned with a consideration of the hematopoietic system and blood formation. The accompanying illustrations are splendid and compel admiration for the author, for drawings that are at once original, graphic, clever and informative. In this small book the author has made no effort to describe the innumerable technics of hematologic examination. He has limited himself to procedures that he has found simple and satisfactory. These are presented in detail. The various hematologic indices are presented in a concise and clear manner. The original photomicrographs are excellent. An outstanding feature of the book is the 100 illustrative cases.

There are some omissions that seem important enough to be included as, for example, supravital staining. Many of the clinical descriptions are sketchy and scattered in parts throughout the book. Treatment is fully but concisely considered. The book is a most welcome addition to the literature of hematology and may be read with great profit by the practitioner.

I. L. ROBBINS, M. D.

Physical Diagnosis: By Richard C. Cabot, M. D., and F. Dennette Adams, M. D. Baltimore, William Wood & Co., 1938. Pp. 846. Price $5.00.

Although this is a twelfth edition, the radical changes in the viewpoint of the authors, the arrangement of the material and the numerous new illustrations virtually stamp it as a new book. At the outset it may be remarked that this new volume is still not the one to fulfil the fond expectation of the teacher in physical diagnosis. One wonders whether any single volume will ever achieve an all-embracing dissertation on the subject, even as one considers the desirability of an exhaustive treatise comprising several volumes. Nevertheless, this book is a step in the right direction. The opinion and experience of many authorities, as opposed to that of the single physician and teacher, is one of the outstanding features distinguishing this volume from its predecessors. The authors plainly indicate that they have made on effort to discuss the many modes of examination but have endeavored to present a system of history writing and examination of the body that will best serve the student in the determination of a diagnosis.

The first portion of the book is devoted to history writing and the examination of the body in whole and in parts. The latter half is devoted to the diagnosis of cardiovascular and respiratory diseases. The abdomen, the gastrointestinal tract. the genitals, and the examination of the joints and the nervous system are discussed. The attempt to touch upon everything necessarily makes for a fragmentary discussion and may be considered by some as one of the weaknesses of the text. Yet, if one will remember that the book may be considered as a guide indicating to the student the necessity of collateral reading, it will serve him to good purpose. One is impressed by the large number of x-ray photographs that find their place in a modern textbook on physical diagnosis. The pictures in the book are numerous, well chosen and plainly discernible. A very brief chapter on electrocardiography is included, in addition to several other subjects not mentioned.

The teacher may find that certain of the data presented do not meet with his approval, for example, as the classification and definition of rales. All things considered, one can safely state that this book is as good as any in this field and better than most. It can be recommended to the student as a book incorporating the best and most recent information in this important branch of medicine.

I. L. ROBBINS, M. D.

PUBLICATIONS RECEIVED

Council on Foods, American Medical Association: Accepted Foods and Their Nutritional Significance.

Davis-Lisson Limited, Canada: Population, Race and Eugenics by Morris Siegel, M. D.

The Johns Hopkins Press, Baltimore: The Flowering of an Idea by Alan M. Chesney.

Lea & Febiger, Philadelphia: Human Helminthology by Ernest Carroll Faust, A. B., M .A., Ph.D.

J. B. Lippincott Company, Philadelphia: The New International Clinics, Volume IV., New Series Two, 1939.

W. B. Saunders Company, Philadelphia: The Anatomy of the Nervous System, by Stephen Walter Ranson, M. D., Ph.D.

Charles C. Thomas, Springfield: The Diagnosis and Treatment of Diseases of the Esophagus by Porter P. Vinson, B. S., M. A., M. D., D. Sc., F. A. C. P. Proctoscopic Examination and Diagnosis and Treatment of Diarrheas by M. H. Streicher, M. S., M. D. Electrocardiographic Patterns by Arlie R. Barnes, M. D. Endocrine Gynecology by E. C. Hamblen, B. S., M. D., F. A. C. S.

The Williams & Wilkins Company, Baltimore: The Surgery of Injury and Plastic Repair by Samuel Fomon, Ph. D., M. D.